

# CANADA YEAR BOOK

1967





THE LIBRARY


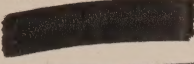
The Ontario Institute

Studies in Education


Toronto, Canada





		
Ref. 317.1 C212		





Digitized by the Internet Archive  
in 2023 with funding from  
University of Toronto

<https://archive.org/details/39250915110080>

















# CANADA YEAR BOOK

## 1967

OFFICIAL STATISTICAL ANNUAL  
OF THE RESOURCES, HISTORY,  
INSTITUTIONS AND SOCIAL AND  
ECONOMIC CONDITIONS OF  
CANADA

*Published by Authority of*

THE HONOURABLE ROBERT H. WINTERS

*Minister of Trade and Commerce*

DOMINION BUREAU  
OF STATISTICS

CANADA YEAR BOOK DIVISION





© Crown Copyrights reserved

Available by mail from the Queen's Printer, Ottawa,  
and at the following Canadian Government bookshops:

HALIFAX: *1737 Barrington St.*

OTTAWA: *Daly Building, corner Mackenzie Ave. and Rideau St.*

TORONTO: *221 Yonge Street*

MONTREAL: *Æterna-Vie Building, 1182 St. Catherine St. West*

WINNIPEG: *Mall Center Bldg., 499 Portage Ave.*

VANCOUVER: *657 Granville St.*

or through your bookseller

A deposit copy of this publication is also available  
for reference in public libraries across Canada

Price: (cloth-bound) \$5.00  
(paper-bound) \$3.00

Catalogue No. CS 11-202/1967  
Catalogue No. CS 11-205/1967

ROGER DUHAMEL, F.R.S.C.  
Queen's Printer and Controller of Stationery  
Ottawa, Canada  
1967

## PREFACE

The year 1967 is Canada's Centenary of Confederation and throughout these one hundred years the story of the country's progress—economic, social and legislative—has been recorded in the Canada Year Book. This publication, from small beginnings in 1867 when statistical and other official information was meagre, has developed to its present form and now encompasses, sometimes in brief and sometimes in detail, the great mass of statistical information that has become available through the Dominion Bureau of Statistics, supplemented by social and legislative data from other Departments of Government and from the provinces. Year by year, the Canada Year Book endeavours to fulfil the formidable task of keeping pace with the rapidly changing economic life of the country. Thus, the whole series of Year Books constitutes an official record of a century of Canada's progress.

The 1967 edition is not a "historical" edition because of the great amount of current data that must be presented, but follows the established policy of including in each chapter the latest information procurable at the time of printing, the emphasis changing with progress and developments in the field covered, and adding new data when available. In this edition, specially prepared articles or chapter material are included on "Growth of Geographical Knowledge of Canada" (pp. 1-6), "Geology and Economic Minerals of Canada" (pp. 19-32), "The Climate of the Canadian Arctic" (pp. 55-74), "Federal Assistance in Livestock Improvement" (pp. 453-457), "Manufacturing and the Changing Industrial Structure of the Canadian Economy, 1946-65" (pp. 665-678), "History of the Labour Movement in Canada" (pp. 773-781), "An Outline of the Development of Civil Air Transport in Canada" (pp. 838-843), "The Development of Telecommunications in Canada" (pp. 862-869) and "Canada's Participation in the Changing Pattern of World Trade, 1953-66" (pp. 953-966). A 140-mile-to-the-inch political map of Canada is inserted in a back-cover pocket.

The volume was produced in the Canada Year Book Division by Miss Margaret Pink, Associate Editor, and the Year Book staff under the editorship and direction of Dr. C. C. Lingard, Director of the Division. The charts and maps, except where otherwise indicated, were prepared by or under the direction of L. Tessier of the Drafting Unit. The frontispiece is a photograph by Malak from the National Film Board of Canada Centennial publication *Stones of History—Canada's Houses of Parliament*. Credits for the other photographic illustrations used throughout the publication are listed on p. iv.

The co-operation of numerous officials of the various Departments of the Federal and Provincial Governments and of this Bureau in the preparation of material for the Year Book is gratefully acknowledged. Credit by means of footnotes is given where possible, either to the persons or to the public service concerned.

*Walter E. Duffett.*

DOMINION STATISTICIAN

DOMINION BUREAU OF STATISTICS,  
OTTAWA, MARCH 1967





# TABLE OF CONTENTS

	PAGE
MAPS AND CHARTS.....	v
PHOTO CREDITS.....	iv
WEIGHTS AND MEASURES AND OTHER INTERPRETATIVE DATA.....	vii
INTERPRETATION OF SYMBOLS.....	viii
CHAPTER	
I PHYSIOGRAPHY AND RELATED SCIENCES.....	1
II CONSTITUTION AND GOVERNMENT.....	78
III POPULATION.....	182
IV IMMIGRATION AND CITIZENSHIP.....	215
V VITAL STATISTICS.....	235
VI PUBLIC HEALTH, WELFARE AND SOCIAL SECURITY.....	277
VII EDUCATION.....	337
VIII SCIENTIFIC AND INDUSTRIAL RESEARCH.....	382
IX CRIME AND DELINQUENCY.....	412
X LAND USE AND RENEWABLE RESOURCE DEVELOPMENT.....	439
XI AGRICULTURE.....	448
XII FORESTRY.....	508
XIII MINES AND MINERALS.....	536
XIV FISHERIES AND FURS.....	597
XV ELECTRIC POWER.....	634
XVI MANUFACTURES.....	665
XVII CAPITAL EXPENDITURES, CONSTRUCTION AND HOUSING.....	705
XVIII LABOUR.....	731
XIX TRANSPORTATION.....	785
XX COMMUNICATIONS.....	861
XXI DOMESTIC TRADE AND PRICES.....	896
XXII FOREIGN TRADE.....	953
XXIII PUBLIC FINANCE.....	1015
XXIV TRENDS IN ECONOMIC AGGREGATES.....	1068
XXV BANKING, OTHER COMMERCIAL FINANCE AND INSURANCE.....	1118
XXVI DEFENCE.....	1167
XXVII OFFICIAL SOURCES OF INFORMATION AND MISCELLANEOUS DATA.....	1185
Books About Canada.....	1185
Directory of Sources of Official Information.....	1204
Special Material Published in Former Editions of the Canada Year Book.....	1236
Register of Official Appointments.....	1240
Federal Legislation, 1966-67.....	1247
Canadian Chronology.....	1254
APPENDIX I.....	1261
APPENDIX II.....	1262
INDEX.....	1263

## PHOTO CREDITS

Frontispiece.....	National Film Board
Title page.....	Malak, Ottawa
Facing p. 1.....	George Hunter, Toronto
p. 5.....	Department of Energy, Mines and Resources
p. 75.....	<i>The Globe and Mail</i> , Toronto
Facing p. 82.....	Malak, Ottawa
	Department of National Health and Welfare
	National Research Council of Canada
	Canada Department of Agriculture
Facing p. 182.....	George Hunter, Toronto
p. 234.....	<i>The Gazette</i> , Montreal
p. 338.....	National Film Board
p. 367.....	<i>The Globe and Mail</i> , Toronto
p. 381.....	National Research Council of Canada
p. 470.....	National Film Board
p. 480.....	National Film Board
p. 488.....	Malak, Ottawa
p. 533.....	<i>Bus and Truck Transport</i> , Toronto
p. 596.....	Fisheries Association of British Columbia, Vancouver
p. 635.....	The Hydro-Electric Power Commission of Ontario, Toronto
p. 663.....	National Film Board
p. 686.....	Dominion Engineering Works, Ltd., Montreal
	Interprovincial Co-operatives Ltd., Winnipeg
Facing p. 686.....	Canadian Westinghouse Company Limited, Hamilton
	Outboard Marine Corporation of Canada Ltd., Peterborough, Ont.
	Canada Packers, Toronto
p. 696.....	Vulcan Containers (Canada) Ltd., Rexdale, Ont.
p. 730.....	<i>The Globe and Mail</i> , Toronto
	The Bell Telephone Company of Canada, Montreal
p. 789.....	Canadian National Railways
Facing p. 840.....	Air Canada
	National Aviation Museum
	Archives of Canada
	National Film Board
	<i>Canadian Aviation</i> , Ottawa
	Northern Helicopters Ltd., Vancouver
	Pacific Western Airlines Ltd., Vancouver
p. 867.....	The Bell Telephone Company of Canada, Montreal
p. 875.....	National Film Board
p. 999.....	Canada Department of Agriculture



## MAPS AND CHARTS

	PAGE
Map: Political Map of Canada.....	<i>Inside back cover</i>
Maps: Section of the Canadian Shield showing knowledge available in 1940 compared with that available in 1966.....	<i>Insert facing</i> 6
Map: Drainage Basins of Canada.....	10
Chart: Geological Time Chart.....	<i>Insert facing</i> 20
Maps: Geological Regions of Canada.....	21
Divisions of the Canadian Shield.....	<i>Insert facing</i>
Chart: Stratum Deposited during Melting of an Ice-Sheet.....	<i>Insert facing</i> 30
Chart: Aeromagnetic Compilation.....	<i>Insert facing</i> 31
Map: Mean Daily Temperatures in Northern Canada for January.....	73
Map: Mean Daily Temperatures in Northern Canada for July.....	74
Map: Time Zones of Canada.....	77
Chart: Organization of the Government of Canada.....	<i>Insert facing</i> 130
Chart: Vital Statistics Rates, 1925-64.....	241
Chart: Age-Specific Death Rates, 1964.....	252
Chart: Main Causes of Death, 1931 to 1964.....	255
Chart: Causes of Infant and Neonatal Deaths, 1964.....	260
Chart: Maternal Deaths.....	264
Chart: Expenditure on Health and Social Welfare by All Levels of Government, Years Ended Mar. 31, 1946-65.....	325
Chart: Expenditure on Health and Social Welfare by All Levels of Government with Per- centages of Total Government Expenditure, Net National Income and Gross National Product, Years Ended Mar. 31, 1951-65.....	327
Chart: Estimated Student Retention to Specified Levels of Education, 1960 and 1965.....	338
Chart: Cash Receipts from Farming Operations, 1956-65.....	470
Chart: Per Capita Consumption of Meat, 1946 and 1965.....	480
Chart: Per Capita Consumption of Dairy Products, 1946 and 1965.....	488
Maps: Mineral References—Newfoundland.....	544
Maritime Provinces.....	545
Quebec.....	546
Ontario.....	547
Prairie Provinces.....	548
British Columbia.....	549
The Yukon and Northwest Territories.....	550
Chart: Growth in Electric Power Generating Capacity in Canada, 1917-70 .....	635
Chart: Utilization of Power.....	637
Chart: Employment in the Manufacturing Industries, 1946-64.....	667
Chart: Shipments, Exports and Imports of Manufactured Goods, 1946-64.....	699
Maps: Scheduled Air Routes 1940 and 1967.....	<i>Insert facing</i> 840
Chart: Supply and Disposition of Canadian Wheat, Crop Years Ended July 31, 1956-65....	910
Chart: Canadian Trade Trends, 1953-66.....	954
Chart: Trends of World Imports by Major Markets, 1953-65.....	956
Chart: Trends of World Trade by Commodity Groups, 1953-65.....	958
Chart: Direction of World Trade, 1953-65.....	960
Chart: Canada's Share of World Market, 1953-65.....	962
Chart: Canada's Share of Selected Markets, 1953-65.....	964



## WEIGHTS AND MEASURES AND OTHER INTERPRETATIVE DATA

In Canada as a rule the Imperial system of weights and measures is followed; an exception is the ton where, unless otherwise stated, the short ton of 2,000 lb. is meant.

### Relative Weights and Measures, Imperial and United States

The following list of coefficients may be used to translate amounts expressed in one unit to the other. Where reference is made to Imperial pint, quart and gallon, their equivalent in ounces is also in Imperial measure; likewise United States designations for these quantities are shown in the U.S. equivalent in ounces. The Imperial (or British) fluid ounce and the U.S. fluid ounce are different measures. One Imperial fluid ounce equals 0.96 U.S. fluid ounce and one Imperial gallon equals 1.2 U.S. gallons.

Imperial pint=20 fluid ounces	1 short ton=2,000 pounds
U.S. pint=16 fluid ounces	1 long ton=2,240 pounds
1 Imperial quart=40 fluid ounces	1 barrel crude petroleum=35 Imperial gallons
1 U.S. quart=32 fluid ounces	1 ounce avoirdupois=0.91146 ounce troy (oz.t.)
1 Imperial gallon=160 fluid ounces	1 statute mile=5,280 feet
1 U.S. gallon=128 fluid ounces	1 nautical mile=6,080 feet
1 Imperial proof gallon=1.36 U.S. proof gallon	

The following weights and measures are used in connection with the principal field crops and fruit; 2.3 bu. of wheat are required to produce 100 lb. of flour.

	<i>Pounds per Bushel</i>		<i>Pounds per Bushel</i>
<b>Grains—</b>		<b>Fruits (standard conversions)—</b>	
Wheat.....	60	Apples.....	45
Oats.....	34	Pears, plums, cherries, peaches, grapes and apricots.....	50
Barley and buckwheat.....	48	Strawberries and raspberries (per qt.)	1.25
Rye, flaxseed and corn.....	56		
Rapeseed and mixed grains.....	50		
All others.....	60		

### Fiscal Years of Federal and Provincial Governments

The fiscal year of the Federal Government and of each of the ten Provincial Governments ends on March 31. Throughout the Year Book, all figures are for calendar years except where otherwise indicated in text or table headings.

### Miscellaneous

Maritime Provinces=Prince Edward Island, Nova Scotia and New Brunswick  
 Atlantic Provinces=Newfoundland, Prince Edward Island, Nova Scotia and New Brunswick  
 Central Canada=Quebec and Ontario  
 Prairie Provinces=Manitoba, Saskatchewan and Alberta  
 Btu.=British thermal unit (coal)  
 Mcf.=thousand cubic feet (gas)  
 n.e.s.=not elsewhere specified  
 n.o.p.=not otherwise provided for  
 psi. (atomic research)=pounds-force per square inch (pressure)  
 D.B.H. (forestry)=diameter at breast height.



## *SYMBOLS*

The interpretation of the symbols used in the tables throughout this publication is as follows:—

- . . figures not available.
- ... figures not appropriate or not applicable.
- nil or zero.
- amount too small to be expressed or where "a trace" is meant.
- » preliminary figures.
- ⌘ revised figures.







The vastness of Canada's territory posed a tremendous task for the early surveyors. Following a system devised in 1871, consisting of townships six miles square, each containing 36 sections of 640 acres, the Dominion Land Surveyors began to lay out the huge prairie chequerboard, using the 49th parallel as the southern boundary and ranging east and west of the prime meridian established that year in the vicinity of Emerson, Manitoba. About one third of the distance between the 49th and 60th parallels across the whole width of the prairies was completed by 1910 and with only minor adjustments these early survey lines remain today. From above the great Regina plain, the section lines bounding the east and west sides of the townships can be seen to run straight through to the horizon.

# CHAPTER I.—PHYSIOGRAPHY AND RELATED SCIENCES

## CONSPECTUS

	PAGE		PAGE
<b>Part I.—Geography and Geology.....</b>	<b>1</b>	<b>SECTION 1. FEDERAL AND PROVINCIAL</b>	
<b>SPECIAL ARTICLE: Growth of Geographi- cal Knowledge of Canada.....</b>	<b>1</b>	<b>PUBLIC LANDS.....</b>	<b>33</b>
<b>SECTION 1. PHYSICAL GEOGRAPHY.....</b>	<b>7</b>	Subsection 1. National Parks.....	35
Subsection 1. Inland Waters.....	9	Subsection 2. Provincial Parks.....	41
Subsection 2. Coastal Waters.....	14	Subsection 3. Ottawa, Canada's National Capital.....	46
Subsection 3. Islands.....	16	<b>SECTION 2. WILDLIFE RESOURCES AND CONSERVATION.....</b>	<b>49</b>
Subsection 4. Mountains and Other Heights.....	17	<b>Part III.—Climate and Time Zones.....</b>	<b>52</b>
<b>SECTION 2. GEOLOGY AND ECONOMIC MIN- ERALS OF CANADA.....</b>	<b>19</b>	<b>SECTION 1. CLIMATE.....</b>	<b>52</b>
<b>SECTION 3. FEDERAL GOVERNMENT SURVEYING AND MAPPING.....</b>	<b>32</b>	<b>SPECIAL ARTICLE: The Climate of the Canadian Arctic.....</b>	<b>55</b>
<b>Part II.—Public Lands, Wildlife and Flora</b>	<b>33</b>	<b>SECTION 2. METEOROLOGICAL OBSERVING STATIONS.....</b>	<b>75</b>
		<b>SECTION 3. STANDARD TIME AND TIME ZONES.....</b>	<b>76</b>

*The interpretation of the symbols used in the tables throughout the Year Book  
will be found on p. viii.*

## PART I.—GEOGRAPHY AND GEOLOGY

### GROWTH OF GEOGRAPHICAL KNOWLEDGE OF CANADA\*

In area, Canada is among the world's leading countries for, although less than half the size of the Soviet Union, it is larger than China, the United States (including Alaska and Hawaii) or Brazil. Yet its population of about 20,000,000 is relatively small. It may be wondered how thoroughly this enormous land has been mapped—to what extent its physical features have been located and described and how much of its territory is in fact known and at the disposal of its inhabitants. A preliminary answer to these questions may come from tracing the growth in knowledge of Canada's geography during the hundred years since 1867. Although today it is possible to speak of a nation extending "from sea to sea and pole to borderland", this was far from being so at its founding. The Canada created by the British North America Act in 1867 was limited to the St. Lawrence Valley, to the northern margins of the Great Lakes (its exact extent into the hinterland being undefined) and to New Brunswick and Nova Scotia. The new Canada had an area of 384,598 sq. miles and a population of about 3,300,000. In essence, it was a nation built around the Gulf of St. Lawrence and penetrating inland only as far as its headwaters reached. This neat and essentially maritime concept was very soon breached, and the immense task of creating a new nation on the northern half of the North American Continent began.

\* Prepared by Dr. Trevor Lloyd, McGill University, Montreal.

The first formal addition was Manitoba, a minuscule (14,350 sq. miles), postage-stamp-like province formed around the nucleus of the Red River Settlement. Of greater ultimate significance was the transfer at that time of title to the vast lands of the Hudson's Bay Company, first chartered two centuries before. This brought under Canadian sovereignty the region of Rupert's Land and the North-Western Territory, much of it still *terra incognita*. A year later British Columbia was added, establishing for the first time the 60th parallel of latitude as the northern limit of a province, a line to become eventually a major feature of the map of Canada and to be demarcated on the ground with great precision from the Pacific Ocean to Hudson Bay. The addition of Prince Edward Island in 1873 rounded out the Maritime Provinces—but Newfoundland (including Labrador) was not to join Confederation until 1949. Thus, the familiar outline of provincial and territorial boundaries fell into place relatively quickly and all (except Newfoundland) have now been in existence for more than half a century. Alberta and Saskatchewan date from 1905 and Manitoba, Ontario and Quebec reached their present limits in 1912. What of the surviving portion of the old Northwest Territories lying beyond the 60th parallel? Early uncertainty as to the northward extent of Canada had been ended with cession by Britain in 1880 of the islands lying north of the mainland. To the west of the Mackenzie River basin lay Yukon Territory, of which the boundaries were first drawn in 1895. By 1912 the Northwest Territories had attained its present limits. Except for the change in the status of Newfoundland, the political map of Canada was stabilized within 45 years of Confederation. In this, of course, are considered only lines on maps or definitions in legal documents; conditions on the ground itself were far less clearly known, since there remained large unexplored areas not only in the Far North but well within the limits of the provinces themselves.

In territorial extent, Canada relatively early on became a large but compact country extending from Atlantic to Pacific in the higher latitudes, and also fronting on the Arctic Ocean. Two minor aspects of its external limits should be mentioned. In the west, Yukon Territory and northern British Columbia are excluded from actual contact with the ocean by a southerly extension of Alaska, the so-called "panhandle". The seaward extent of Canadian sovereignty in the Far North has been less than precisely known. Canadian maps have customarily shown lines extending from the easterly and westerly limits of the country along the 60th and 141st lines of longitude as far as the North Pole, with the declared intention of claiming any new lands that may be found within these limits. In view of the advanced state of geographical knowledge in the Arctic today, the lines are probably no longer significant.

Filling in the map of Canada with topographical detail has been a long and exacting task, which remains far from completed. Exploration began (if one excludes the pioneering travels of Indians and Eskimos) about a thousand years ago with the arrival of Vikings from Greenland. Details of their discoveries, and those of others who may have followed them until the fifteenth century, have not survived but the records of later voyages include some of the most illustrious navigators and explorers in history. Canada has been singularly fortunate in its geographical pioneers—the Cabots, Cartier, Frobisher, Davis, Hudson, Baffin, Cook, Thompson, Ross, Franklin, Sverdrup, Amundsen, Stefansson and many others.

A pattern of exploration evolved which was determined by the initial approach from Europe and the configuration of the Atlantic shoreline. The St. Lawrence estuary invited search and this led on to the Great Lakes and the interior of the Continent and then by waterways to the northwest, to the Arctic and to the Pacific. Farther north, the search for a western sea and the route to Asia led by way of Hudson Strait into the Bay, but failure to find an outlet there forced the search still farther north, through Davis Strait and Baffin Bay and then westward, where it was long frustrated by the complex of islands and narrow channels and by the summer ice.

In the south, the old westward route from the St. Lawrence was eventually followed up in the railway era, when the Canadian Pacific skirted the Great Lakes route to the Red River and then struck out across the prairies to the Rocky Mountains where river



valleys eventually led to the coast. Hence, it was in these lower latitudes that major geographical exploration was focused immediately following Confederation. Reconnaissance surveys were carried out by government parties in the 1870s and by 1880 the Geological Survey of Canada (in those days a comprehensive scientific survey) was probing and mapping the region between Edmonton and the coast. Such early maps were a *pot-pourri* assembled from new traverses by field surveyors, information from exploration by Alexander Mackenzie a century earlier and the reports of Indians. It was in those years that such features as the Peace River appeared on the map for the first time with reasonable accuracy, and then was recorded the first systematic description of that river's canyon, now, nearly 80 years later, the site of a large hydro-electric development.

It is to the need for accurate location of railway routes and the subdivision of prairie farm lands that is owed the very rapid reconnaissance mapping of the area between Lake Superior and the mountains. As air travellers today cross the prairies in a few hours, they can discern below one of the most distinctive of man's imprints on the earth's surface, the uniform pattern of squares and of meridians, range-lines and townships placed there by land surveyors in the closing years of the nineteenth century. On the sure foundation of this early work there has followed series after series of topographic and other maps, and the work continues with increasing refinement.

Elsewhere, what might be termed the 'pre-scientific' era of geographical exploration continued longer. Because of early work by government geologists and surveyors (Ogilvie in the Yukon and Mackenzie areas, Low in Ungava and Bell, the Tyrrells and others south and west of Hudson Bay) and by others before them, the major features south of the Arctic Circle were outlined by the early years of the present century. It was already apparent that the need was now for more systematic, comprehensive surveys and for a steadily expanding, government-sponsored scientific study of the whole country.

Farther north, scientific surveys were longer delayed, in the remoter regions until as late as the mid-1940s. Prior to this, notable contributions to exploration of the Arctic islands by non-Canadians were made by Nares of the British Admiralty (1875); Sverdrup of Norway (1898-1902), working among the more easterly of the islands, has left reminders of the range and thoroughness of his work in many Norwegian place names; and Peary and others explored Ellesmere Island in 1906 and 1909. Amundsen by his voyage (1903-06) from Atlantic to Pacific along an arctic route finally completed the Northwest Passage. His arrival in the Western Arctic coincided with the first journey there by Stefansson, who continued active exploration until 1918. It was he who added the last of the major discoveries to the map of Arctic Canada and who initiated the major participation by Canadians in northern exploration. He combined great ability as a traveller with the advantages of scientific training. At about the same time, an able and determined Canadian seafarer, Captain J. E. Bernier, began a long series of exploratory voyages in the Eastern Arctic.

The era of the large polar expeditions to Northern Canada ended with the First World War and from the 1920s on there began less wide-ranging and more systematic studies of topography, geology, biology, magnetism and other disciplines, greatly aided by improved technology, including the use of aircraft and radio. Formal government participation now became more usual, particularly in broad surveys, while the gifted amateur undertook detailed studies of limited areas.

The burst of government activity in the North during the 1920s, although short-lived, carried a small but very able group of field scientists even beyond the mainland. No attempt to map the whole area could be made but the location of a few places was fixed astronomically and the general arrangement of the chief land masses determined more surely. The modest degree of precision can be judged from a statement in 1930 that "the most easterly point of Baffin Island is in approximately longitude 62° W and on or near the Arctic Circle". A few years before the location of Cape Dorchester, one of the main features on the west coast of that island was shifted about 60 miles southward and a large new bay introduced, this by a visiting American expedition. In those days there was scarcely a point on the map of Northern Canada which could not benefit from the attention of such



summer visitors and many lakes, headlands and islands still awaited discovery and naming. On the whole, the geography of Northern Canada remained a patchwork affair, assembled from the results of expeditions, some of them centuries old. By the 1920s, however, it was beginning to be possible to tie the information together with some assurance. Annual government expeditions by sea between 1922 and 1929 seemed a very promising beginning to a plan to explore and map the whole of the North but policies changed and no major advance proved possible for more than a decade.

Faced with the enormous task of providing accurate maps of Canada, the available resources were quite naturally marshalled for use in the South. As late as 1927 the basic geodetic network, the foundation of all really accurate maps and the locating of specific points within the country, was still edging its way through the southern part of the provinces. It would be decades before anything comparable would become possible in the Arctic. However, maps there had to be, even to remote regions, and they were produced using the best data available. In the early 1940s topographic mapping to a scale of eight miles to the inch finally reached the shores of the polar sea. That the information came in large part from early and sometimes single explorers and was often far from accurate, was less important than that the maps existed. Canada had at last been delimited after a fashion. Dotted lines showed uncertain coasts and large blank areas revealed little but the state of topographic ignorance, yet the maps set the stage for the major surveying and mapping campaign that soon followed.

Systematic exploratory surveys in the North were first undertaken by the Federal Government after the First World War. They were, in effect, an extension into higher latitudes of the techniques that had been used on the prairies, in the western Cordillera and on the southern part of the Canadian Shield. The search for minerals was moving northward and maps were needed to assist geologists and prospectors; improved administration of the area was urgent, as was better transportation.

If only for reasons of convenience, the area that benefited first was the Mackenzie Valley. Although not remote, it was described by Charles Camsell in 1921 as an area about which very little was known. In that year surveys were extended northward from Alberta along the waterway and down to the Arctic Coast. This was a combined operation by topographic surveyors, geologists, hydrographers and geodesists. As a consequence, the Valley was linked securely to Southern Canada and a framework laid down so that more detailed exploration and mapping could go ahead. For the first time there were maps of the Mackenzie River itself—along which stern-wheeled steamers had been navigating by faith and the skill of Indian pilots for several decades. How much remained to be done is illustrated by the fact that Great Slave Lake, a water body of nearly 11,000 sq. miles discovered by Samuel Hearne in 1771 and crossed by Mackenzie in 1789, was not shown on maps with even reasonable accuracy until 1924. The major attempt to extend mapping northward by traditional means demonstrated clearly that, without new time- and labour-saving techniques, the task would be all but impossible. The introduction of aircraft and radio eventually transformed this situation.

During the 1930s, surveying and cartographic techniques were being tried out which, when perfected, made it possible to complete the first mapping of Canada within a few years. It was the aerial camera that made this practicable and much of the original experimentation was carried out under the urgent need to map the North. In its early stages, using oblique air photographs which included the horizon, the detail was transferred to paper with the aid of an ingenious perspective grid etched on a glass plate. This method happened to be particularly useful on the relatively level, lake-strewn Canadian Shield. Vertical photographs were also used but they covered a smaller area so that the mapping took longer. In the more rugged western mountains, the camera was also useful but, because aircraft could not then be employed, rounds of photographs were taken from the higher peaks.

During the Second World War more dependable and longer-range aeroplanes became available, along with more elaborate cameras and plotting equipment, and the coverage of Northern Canada went ahead swiftly. At first the trimetrogon system was used, by which a high-flying aeroplane carried three cameras, simultaneously photographing ahead and to

both sides of the flight line. Exact location of ground control points was still needed and here again air transport was invaluable for by this means survey teams could be moved quickly from place to place and the field season was greatly extended because shipping was no longer needed. From 1948 onward, helicopters were also used. As a result of such technological changes, most of Canada (including the Arctic Archipelago) was covered with vertical air photography, suitable for small-scale mapping, by the late 1950s. At the same time, even more rapid survey methods were being introduced utilizing such electronic distance-measuring devices as shoran and tellurimetry.

Perhaps geological surveying realized the most dramatic results from the use of helicopters and related instrumentation. It has been estimated that between 1842 and 1951 the Geological Survey mapped about 1,000,000 sq. miles of the land surface of Canada; during the next seven years about 500,000 sq. miles were mapped, largely attributable to use of helicopters. This advance has been particularly striking in the Arctic islands where access is difficult, the climate is often very severe and local bases for supply are scarce. In place of the traditional means of transport—dog team, canoe and foot—the Geological Survey in 1955 introduced to the area a carefully planned system of helicopter transport to carry personnel, instruments and supplies. Air photographs provided the needed topographic details. This experiment proved to be efficient, safe and economical and set the pattern for all later field operations in the North. The more elaborate and continuing Polar Continental Shelf Project, covering in effect the most northerly Arctic islands and including all aspects of science, depends largely on this means of transport and observation.

Even the most casual comparison of maps published 25 years ago with those now available demonstrates the notable increase of knowledge of the northern part of the country. The Canadian Shield is shown to be a maze of large and small lakes and complicated water courses where once it appeared as a more or less empty plain and a few large bodies of water, with supplementary detail along the explorers' canoe route. The shapes of land masses have changed and islands appear where none were before. Prince Charles Island in



A laden helicopter arriving at a geographers' base camp on the east coast of Baffin Island. The use of the helicopter has made possible much of the recent advance in knowledge of the physical geography of Canada's North, for by this means personnel, instruments and supplies can be transported quite readily to remote or otherwise inaccessible areas.



Foxe Basin was added to the map following its sighting from the air in 1948 in a region thought to be reasonably well known. Borden Island, discovered 50 years ago by Stefansson, was shown by air photographs to be in fact two islands, the second of which was then named after Mackenzie King. Bathurst Island was revealed as a veritable archipelago and the northern coast of Melville Island was changed almost beyond recognition. Topographical detail has now been added to the maps, with careful contouring replacing such notations as that on Baffin Island "mountains believed to rise to 6,000 feet". In place of geological maps based on random sampling at convenient points along the shoreline, detail can now be provided uniformly over the area. Hydrographic surveys have resulted in reasonably complete charts of all the main routes followed by summer supply ships, and observations made from the smooth surface of the frozen sea have provided submarine topography where even ships cannot penetrate. In such ways, the search for knowledge has reached out into the deeper waters of the Arctic basin.

Study of the remoter parts of Northern Canada is now more comprehensive and there has also been a change in emphasis. Until comparatively recently the need was to know elementary facts about the land and the surrounding seas—in essence, their whereabouts and general character. This first approximation to geographical knowledge was finally completed in the 1950s, to be followed by more detailed surveying and mapping on larger scales. This essential task still continues but it has given way in priority to the carefully planned and all-inclusive scientific survey, similar in scope if not in degree to the established government surveys of Southern Canada.

The monumental *Atlas of Canada* published in 1958 demonstrates more clearly than can words the phenomenal increase in geographical knowledge of the country since the mid-nineteenth century. Its 110 selected sheets cover topics ranging from the routes of the early explorers to the nation's external relations, and reveals not only the state of accumulated knowledge but also the increasingly sophisticated means used in gathering it. Although some of the information used was, of course, assembled during the nineteenth century, a comparison between the Atlas and its predecessor published in 1906 reveals how much has been contributed during the present century. Also apparent is the change in the character of geographical knowledge—using the term in the sense of systematic information which may be displayed areally. To the earlier requirement for topographic maps has been added the need for detailed information on geology, vegetation, climate, soils and a wide range of geophysical phenomena. Also, apart from such physical data, there is arising a great demand for information on the whole range of human, including economic, relationships. Details of population distribution can be mapped with great accuracy (even the whereabouts of the Eskimos is known) as can the location of industries, transportation systems, educational and welfare facilities and a wide range of other essentials to everyday life, from garages to television stations. It has become possible to display the manner in which the land surface of the country is being utilized, whether for forests, pastures, cities, reservoirs, parks and so on and, up to a point, where its improper use has been harmful. Pockets of poverty, rural and urban, can be plotted, as can existing and potential natural wealth.

In other words, the compendium of geographical knowledge about Canada has reached a stage where it is becoming possible to consider the country as "known" in the sense that the older parts of Europe have long been known. This has been brought about by deliberate policy, acting through a complex system of government departments, federal and provincial, charged with gathering information of all kinds and supplemented by important contributions from university scientists.

Almost a thousand years after the first tentative touchdown by Vikings along the eastern seaboard and a century after Confederation, national stocktaking is approaching completion. New knowledge will, of course, continue to pour in at an ever-increasing pace but it will be fitted into a geographical framework which is no longer likely to change dramatically.\*

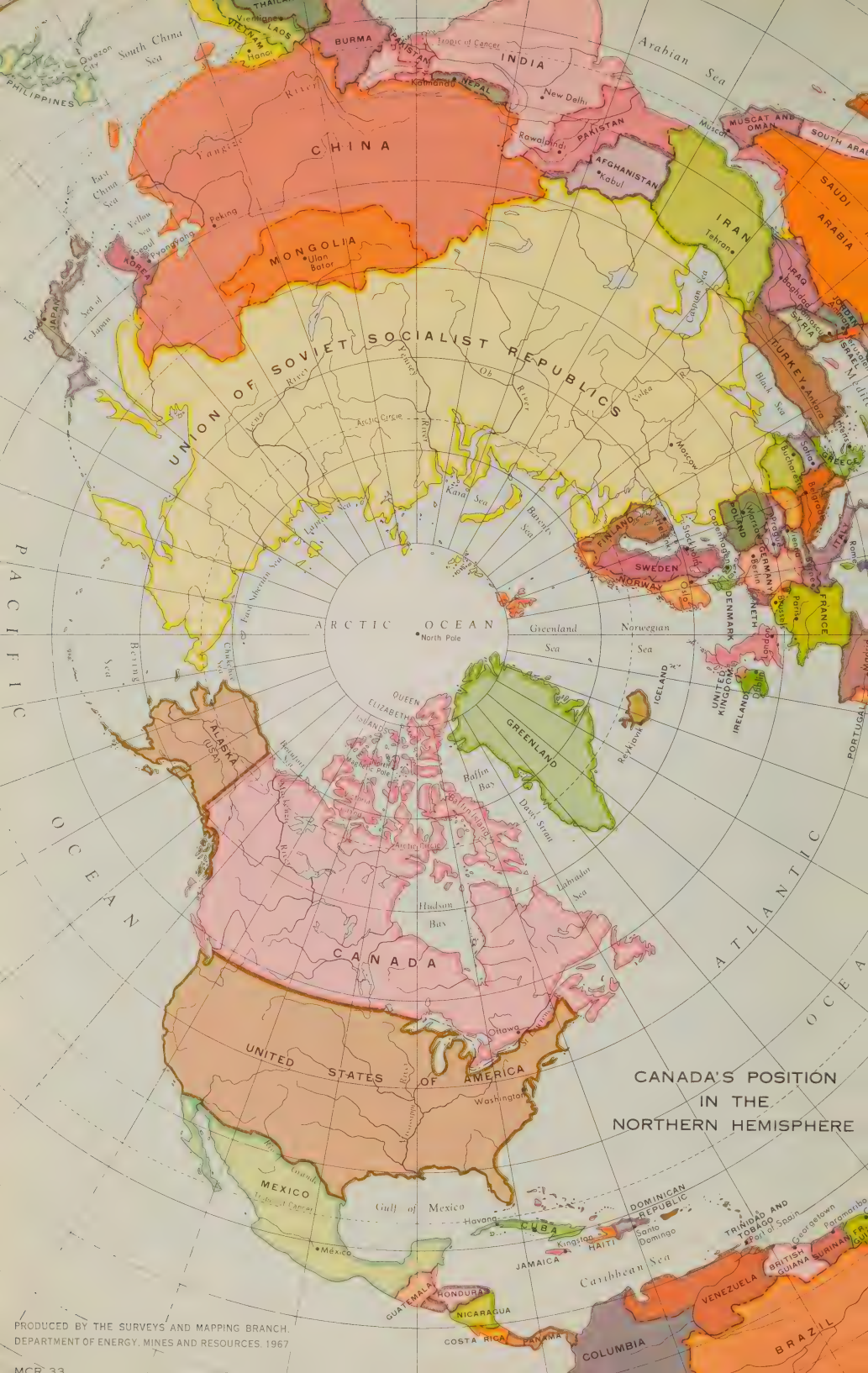
\* A description of the current surveying and mapping service of the federal Department of Energy, Mines and Resources is given at pp. 32–33.



Growth of geographical knowledge in the past quarter-century is indicated by the detail appearing in these maps of the same portion of the Canadian Shield in northern Ontario; the one above was drawn in 1940 and the one below in 1966.







CANADA'S POSITION  
IN THE  
NORTHERN HEMISPHERE

## Section 1.—Physical Geography\*

Canada occupies the northern half of the North American Continent with the exception of Alaska and Greenland, extending in longitude from Cape Spear, Newfoundland, at 52° 37' W, to Mount St. Elias, Yukon Territory, at 141° W, a distance of 88° 23' or 3,223 miles. In latitude it stretches from Middle Island in Lake Erie, at 41° 41' N, to the North Pole. The northernmost point of land is Cape Columbia on Ellesmere Island, at 83° 07' N, and the straight-line distance from Middle Island to Cape Columbia is 2,875 miles.

In shape, Canada resembles a distorted parallelogram with its four corners making important salients. In the north the salient formed by the Arctic Archipelago, which penetrates deep into the Arctic basin, guards the northern approaches to the Continent from Europe and Asia and makes Canada neighbour to the Union of Soviet Socialist Republics. In the south the salient of peninsular Ontario thrusts far into the heart of the United States. In the east the salient of Labrador and the Island of Newfoundland commands the shortest crossings of the North Atlantic Ocean and links Canada geographically with Britain and France. In the west the broad arc of land between Vancouver in southern British Columbia and Whitehorse in Yukon Territory provides the shortest crossings of the North Pacific Ocean between continental North America and the Far East. Canada thus lies at the crossroads of contact with the principal powers and some of the most populous areas of the world.

### 1.—Approximate Land and Freshwater Areas, by Province or Territory

NOTE.—A classification of land areas as agricultural, forested, etc., is given in Chapter X on Land Use and Renewable Resource Development.

Province or Territory	Land	Freshwater	Total	Percentage of Total Area
	sq. miles	sq. miles	sq. miles	
Newfoundland.....	143,045	13,140	156,185	4.1
Island of Newfoundland.....	41,164	2,195	43,359	1.1
Labrador.....	101,881	10,945	112,826	5.0
Prince Edward Island.....	2,184	—	2,184	0.1
Nova Scotia.....	20,402	1,023	21,425	0.6
New Brunswick.....	27,835	519	28,354	0.7
Quebec.....	523,860	71,000	594,860	15.4
Ontario.....	344,092	68,490	412,582	10.7
Manitoba.....	211,775	39,225	251,000	6.5
Saskatchewan.....	220,182	31,518	251,700	6.5
Alberta.....	248,800	6,485	255,285	6.6
British Columbia.....	359,279	6,976	366,255	9.5
Yukon Territory.....	205,346	1,730	207,076	5.4
Northwest Territories.....	1,253,438	51,465	1,304,903	33.9
Franklin.....	541,753	7,500	549,253	14.3
Keewatin.....	213,460	9,700	223,160	5.9
Mackenzie.....	493,225	34,265	527,490	13.7
<b>Canada.....</b>	<b>3,560,238</b>	<b>291,571</b>	<b>3,851,809</b>	<b>100.0</b>

In size, Canada is the largest country in the Western Hemisphere and the second largest country in the world. Its area of 3,851,809 sq. miles may be compared with that of the Union of Soviet Socialist Republics, 8,649,539 sq. miles,† China (including Taiwan and Pescadores), 3,705,408 sq. miles,† the United States of America (including Alaska and Hawaii), 3,615,211 sq. miles,† and Brazil, 3,286,488 sq. miles.† It is more than forty times the size of Britain and eighteen times that of France. The immense size of the country, while encompassing many resources and seeming to afford much scope for settle-

\* Revised by the Geographical Branch, Department of Energy, Mines and Resources, Ottawa.

† United Nations Statistical Yearbook, 1965.

ment, imposes its own burdens and limitations, particularly because much of the land is mountainous and rocky or is under an arctic climate. The developed portion is probably not more than one third of the total; the occupied farm land is less than 8 p.c. and the currently accessible productive forest land 19 p.c. of the total. The population of Canada, estimated at 19,919,000 as at June 1, 1966, may be compared with 192,119,000\* for the United States (including Alaska and Hawaii) (1964) and with 78,809,000\* for Brazil (1964).

The mileages in Table 2 are another indication of the size of Canada. They show the length of communication facilities required between the larger cities, between outlying industrial communities built up around large mining or smelting projects and the nearest cities, and between northern outposts and the supplying cities. In this table, mileage given is for the major means of transport used between the points concerned; air mileages are given for most transcontinental distances.

The length of Canada's southern border adjoining the United States is 3,986.8 miles and the length of the Yukon-British Columbia border adjoining Alaska is 1,539.8 miles.

## 2.—Travel Distances between Certain Cities and Other Points of Interest in Canada

NOTE.—The dash used in this table indicates that the distance concerned is of no particular interest. In each case the mileage given is for the type of travel most generally used—road (H), rail (R), air (A) or water (W); air mileages are given for most transcontinental distances. Water routes are given in nautical miles.

To	Halifax	Montreal	Quebec	Ottawa	Toronto	Winnipeg	Edmon- ton	Van- couver
From	miles	miles	miles	miles	miles	miles	miles	miles
St. John's, Nfld.....	W 531	W 1,043	W 904	—	W 1,336	—	—	A 3,955
Charlottetown, P.E.I.....	H 151	—	—	—	—	—	—	—
Halifax, N.S.....	—	H 824	H 657	—	H 1,164	—	—	A 3,232
Fredericton, N.B.....	H 298	H 526	H 359	—	—	—	—	—
Saint John, N.B.....	H 276	H 593	H 426	H 719	H 933	—	—	—
Chibougamau, Que.....	—	—	R 608	—	—	—	—	—
Montreal, Que.....	R 840	—	H 167	H 126	H 340	A 1,419	A 2,225	A 2,668
Quebec, Que.....	—	H 167	—	H 293	H 507	A 1,436	—	A 2,814
Schefferville, Que.....	—	R 357	R 357	—	—	—	—	—
Sept Îles, Que.....	—	W 430	W 291	—	—	—	—	—
Fort William, Ont.....	—	W 430	W 291	—	—	—	—	—
Fort William, Ont.....	—	W 1,055	W 1,194	R 878	W 762	R 419	R 1,219	R 1,892
Hamilton, Ont.....	—	H 382	H 549	H 290	H 42	—	—	—
Ottawa, Ont.....	—	H 126	H 293	—	H 248	A 1,325	A 2,131	A 2,574
Sudbury, Ont.....	—	—	—	H 311	H 244	R 945	—	—
Toronto, Ont.....	W 1,188 <sup>1</sup>	H 340	H 507	H 248	—	A 957	A 1,748	A 2,360
Churchill, Man.....	—	—	—	—	—	R 992	—	—
Lynn Lake, Man.....	—	—	—	—	—	R 723	—	—
Winnipeg, Man.....	—	—	—	—	A 957	—	R 800	R 1,473
Regina, Sask.....	—	R 1,764	—	R 1,653	R 1,587	R 356	R 512	R 1,117
Saskatoon, Sask.....	—	—	—	—	—	R 470	R 330	R 1,095
Uranium City, Sask.....	—	—	—	—	—	A 456	A 194	A 992
Calgary, Alta.....	—	—	—	—	R 2,063	R 832	R 194	R 641
Edmonton, Alta.....	—	R 2,159	—	R 2,041	R 2,007	R 800	—	R 765
Fort St. John, B.C.....	—	—	—	—	—	—	A 371	R 728
Kitimat, B.C.....	—	—	—	—	—	—	—	W 420
Prince Rupert, B.C.....	—	—	—	—	—	—	R 956	W 477
Vancouver, B.C.....	A 3,232	A 2,668	R 3,042	R 2,770	A 2,360	A 1,403	R 765	—
Victoria, B.C.....	A 3,279	—	—	—	—	—	—	W 81
Dawson, Y.T.....	—	—	—	—	—	A 1,058	A 316	A 615
Whitehorse, Y.T.....	—	—	—	—	—	—	H 1,283	A 1,056
Frobisher, N.W.T.....	—	A 1,297	—	—	—	—	A 3,522	A 3,965
Inuvik, N.W.T.....	—	A 3,543	—	—	—	A 2,140	A 1,318	A 1,554
Yellowknife, N.W.T.....	—	—	—	—	—	A 1,398	A 656	A 1,192

<sup>1</sup> Via Strait of Canso.

Politically, Canada is divided into ten provinces and two territories. Each province is sovereign in its own sphere and administers its own natural resources, and upon such

\* United Nations Population and Vital Statistics Report, Jan. 1, 1966.



resources, as related to topography, position and climate, is based the economy of the province. The resources of the Yukon and Northwest Territories, because of the remoteness, the great extent and the meagre and scattered populations of these areas, are administered by the Federal Government.

The main physical and economic characteristics of each province and territory are described in some detail in the 1963-64 Year Book; this article is available in reprint form. Also, it should be mentioned that the economic development of the country as a whole, based in the first instance on physical features and later on other factors, has formed regions quite distinct from the political divisions. These economic regions are described in an article appearing in the 1962 Year Book at pp. 17-23.

All geographical data on Canada that might be of use in promoting the country's economic, commercial and social welfare are available from the Geographical Branch of the Department of Energy, Mines and Resources. The work of this Branch includes the compiling of geographical material of national significance and the conducting of geographical surveys in the field. Land surface conditions, land use, types of vegetation and the structure of towns and cities are typical subjects of investigation. The Canadian Permanent Committee on Geographical Names, administered by the Branch, deals with all questions of geographical nomenclature affecting Canada and undertakes research and investigation into the origin and usage of geographical names. The Committee is composed of representatives of the federal mapping agencies and other federal agencies concerned with nomenclature and a representative appointed by each province.

### Subsection 1.—Inland Waters

The inland waters of Canada (not including saltwater areas that are a part of Canada) are extensive, constituting about 7.6 p.c. of the total area of the country. Aside from their basic essentiality to the support of life, Canada's fast-flowing rivers and chains of lakes have had a great bearing on the development of the country and on its economic and social well-being. In the early days of exploration and settlement, they were the avenues of transportation and often the source of subsistence. These functions have now diminished in importance; with the exception of the St. Lawrence and certain water routes in the interior and the Far North, the rivers and lakes have assumed other roles in the domestic, industrial, agricultural and recreational life of the people. They still serve as efficient carriers of pulpwood from the forests to the mills and their waters are harnessed to provide power for industry or are dammed and diverted to irrigate and bring life to otherwise waste land.

The inland waters of Canada are best studied by segregating the main drainage basins. The Atlantic drainage basin is the most important, being dominated by the Great Lakes-St. Lawrence system which drains an area of approximately 678,000 sq. miles and forms an unequalled navigable inland waterway through a region rich in natural and industrial resources. From Duluth, Minn., at the head of Lake Superior to Belle Isle at the entrance to the Gulf of St. Lawrence the distance is 2,280 miles. The entire drainage area to the north of the St. Lawrence and the Great Lakes is occupied by the southern fringe of the Canadian Shield—a rugged, rocky, plateau region over the edge of which tumble many swift-flowing tributary rivers. These rivers, as well as the St. Lawrence itself, provide the electric power necessary to operate the great industries of the area. South of the St. Lawrence, the smaller rivers are important locally. The St. John, for instance, drains a fertile area and provides most of New Brunswick's hydro power.

The Hudson Bay drainage basin, although the largest in area, is the least important economically. Only the Nelson and Churchill Rivers have power potential within econom-



ical distance of settled areas. The two main branches of the Saskatchewan River, tributary to the Nelson, drain one of Canada's great agricultural regions and are now the bases of important irrigation projects.

The Arctic drainage basin is dominated by the Mackenzie, one of the world's longest rivers, which flows 2,635 miles from the head of the Finlay River to the Arctic Ocean and drains an area in the three westernmost provinces of approximately 700,000 sq. miles. Except for a 16-mile portage in Alberta, barge navigation is possible from the end of steel at Waterways on the Athabasca River to the mouth of the Mackenzie, a distance of 1,700 miles.



The rivers of the Pacific basin rise in the mountains of the Cordilleran Region and flow to the Pacific Ocean over tortuous, precipitous courses, rushing through steep canyons and tumbling over innumerable falls and rapids. They provide power for large hydro developments and in season swarm with salmon returning inland to their spawning grounds. The major rivers of the basin are the Fraser which rises in the Rocky Mountains and toward its mouth flows through a rich agricultural area, the Columbia which is an international river with a total fall of 2,650 feet during its course and has thus a tremendous power potential, and the Yukon River which is also an international river but, though the largest on the Pacific slope, is at present relatively unimportant economically.

Table 3 lists the principal rivers of Canada and their tributaries. The tributaries and sub-tributaries are indicated by indentation of names; thus the Ottawa and other rivers are shown as tributary to the St. Lawrence, and the Gatineau and other rivers as tributary to the Ottawa.

## 3.—Lengths of Principal Rivers and Their Tributaries

Drainage Basin and River	Length	Drainage Basin and River	Length
	miles		miles
<b>Flowing into the Atlantic Ocean</b>		<b>Flowing into Hudson Bay—concluded</b>	
St. Lawrence (to head of St. Louis, Minn.).....	1,900	Eastmain.....	510
Ottawa.....	696	Fort George (to Nichicum Lake).....	480
Gatineau.....	240	Attawapiskat.....	465
du Lièvre.....	205	Kazan.....	455
Coulonge.....	135	Nottaway (to head of Waswanipi).....	400
Madawaska.....	130	Waswanipi.....	190
Rouge.....	115	Nelson (to head of Lake Winnipeg).....	400
Mississippi.....	105	Rupert.....	380
Petawawa.....	95	Red (to head of Lake Traverse).....	355
South Nation.....	90	George (to Hubbard Lake).....	345
Dumoine.....	80	Moose (to head of Mattagami).....	340
North.....	70	Abitibi.....	340
North Nation.....	60	Mattagami.....	275
Saguenay (to head of Peribonca).....	475	Missinabi.....	265
Peribonca.....	280	Hayes.....	300
Mistassini.....	185	Winisk.....	295
Ashuapmuchuan.....	165	Whale.....	270
Saint-Maurice.....	325	Harriicanaw.....	250
Mattawin.....	100	Great Whale.....	230
Manicouagan (to head of Racine de Bouleau).....	310	Leaf.....	165
Outardes.....	270		
Bersimis.....	240	<b>Flowing into the Pacific Ocean</b>	
Richelieu.....	210	Yukon (mouth to outlet of Tagish Lake).....	1,587
St. Francis.....	165	Yukon (Int. Boundary to head of Nisutlin).....	714
Chaudière.....	120	Porcupine.....	448
Via the Great Lakes—		Pelly.....	330
French (to head of Sturgeon).....	180	Stewart.....	331
Sturgeon.....	110	Teslin.....	215
Grand.....	165	White.....	161
Thames.....	163	Columbia (total).....	1,150
Spanish.....	153	Columbia (in Canada).....	459
Trent.....	150	Kootenay (total).....	407
Mississagi.....	140	Kootenay (in Canada).....	276
Nipigon (to head of Ombabika).....	130	Fraser.....	850
Moirs.....	60	Thompson (to head of North Thompson).....	304
Thessalon.....	40	North Thompson.....	210
St. John.....	418	South Thompson (to head of Shuswap).....	206
Romaine.....	270	Nechako.....	287
Natashquan.....	241	Stuart (to head of Driftwood).....	258
Moisie.....	210	Chilcotin.....	146
Churchill.....	208	West Road (Blackwater).....	141
Exploits.....	153	Skeena.....	360
Naskaupi.....	152	Bulkley (to head of Maxam Creek).....	160
Canairiktok.....	139	Stikine.....	335
Eagle.....	138	Alsek.....	260
Miramichi.....	135	Nass.....	236
Marguerite.....	130		
Gander.....	102		
<b>Flowing into Hudson Bay</b>		<b>Flowing into the Arctic Ocean</b>	
Nelson (to head of Bow).....	1,600	Mackenzie (to head of Finlay).....	2,635
Saskatchewan (to head of Bow).....	1,205	Peace (to head of Finlay).....	1,195
South Saskatchewan.....	865	Finlay.....	250
Red Deer.....	385	Smoky.....	245
Bow.....	315	Little Smoky.....	185
Belly.....	180	Parnip.....	145
North Saskatchewan.....	760	Athabasca.....	765
Red (to head of Sheyenne).....	545	Pembina.....	210
Assiniboine.....	590	Liard.....	755
Souris.....	450	South Nahanni.....	350
Qu'Appelle.....	270	Petitot.....	295
Winnipeg (to head of Firesteel).....	475	Fort Nelson.....	260
English.....	330	Hay.....	530
Churchill.....	1,000	Peel (to head of Ogilvie).....	425
Beaver.....	305	Arctic Red.....	310
Koksoak (to head of Caniapiscaw).....	660	Slave.....	258
Caniapiscaw.....	575	Twitya.....	200
Severn (to head of Black Birch).....	610	Back.....	605
Albany (to head of Cat).....	610	Coppermine.....	525
Dubawnt.....	580	Anderson.....	430
		Horton.....	275

The outstanding lakes of Canada are the Great Lakes, although only parts of these are in Canadian territory. The International Boundary between Canada and the United States passes through Lakes Superior, Huron, St. Clair, Erie and Ontario. Details are given in Table 4.

There are no tides in the Great Lakes although there is considerable variation in water levels caused by strong winds.

#### 4.—Elevations, Areas and Depths of the Great Lakes

Lake	Elevation Above Sea Level	Length	Breadth	Maximum Depth	Total Area	Area on Canadian Side of Boundary
	ft.	miles	miles	ft.	sq. miles	sq. miles
Superior.....	602.23	383	160	1,301	32,483	11,524
Michigan (U.S.A.).....	580.77	321	118	923	22,400	—
Huron.....	580.77	247	101	748	23,860	15,353
St. Clair.....	575.30	26	24	21	432	270
Erie.....	572.40	241	57	209	9,889	4,912
Ontario.....	245.88	193	53	775	7,313	3,849

Other large lakes of Canada, ranging in area from 9,500 to 12,300 sq. miles, are Lake Winnipeg, Great Slave Lake and Great Bear Lake. Apart from these, notable for size, are innumerable lakes scattered over that major portion of Canada lying within the Canadian Shield. In an area of 6,094 sq. miles, accurately mapped, south and east of Lake Winnipeg, there are 3,000 lakes. In an area of 5,294 sq. miles, accurately mapped, southwest of Reindeer Lake in Saskatchewan, there are 7,500 lakes.

#### 5.—Elevations and Areas of Principal Lakes, by Province

NOTE.—Areas given are for mean water levels. For those reservoirs and lakes for which two elevations are given, HW means high water and LW low water. All elevations are in feet above mean sea level. "Total" refers to the area of the whole lake; "part" refers to the area within the designated province or territory.

Province and Lake	Elevation	Area	Province and Lake	Elevation	Area
	ft.	sq. miles		ft.	sq. miles
<b>Newfoundland—</b>			<b>Quebec—concluded</b>		
Deer.....	12	24	Deux Montagnes (des).....	73	63
Gander.....	86	49	Eau Claire (à l').....	790	535
Grand.....	275	205	Evans.....	760	180
Melville.....	sea level	1,133	Goéland.....	810	125
Michikamau.....	1,521	566	Indian House.....	890	125
Red Indian.....	500	70	Kempt.....	1,372	75
Victoria.....	700	15	Kipawa.....	884	125
			Lower Seal.....	860	130
<b>Nova Scotia—</b>			Manicouagan.....	645	110
Bras d'Or.....	tidal	360	Manouane.....	1,340	100
			Matagami.....	765	88
<b>New Brunswick—</b>			Minto.....	450	485
Grand.....	tidal	65	Mistassini.....	1,220	840
			Nichicun.....	1,737	150
<b>Quebec—</b>			Olga.....	785	50
Abitibi (total, 360) part.....	868	56	Payne.....	430	230
Albanel.....	1,289	172	Pipmucan (reservoir).....	HW 1,305 LW 1,275	90
Baskatong (reservoir).....	HW 732 LW 677	109	Plétipti.....	1,660	138
Bienville.....	1,400	392	Quinze, des.....	HW 867 LW 857	55
Burnt (Brûlé).....	1,590	56	Saint-François, River St.		
Cabonga (reservoir).....	HW 1,185 LW 1,169	66	Lawrence (total, 88) part.....	160	63
Caniapiscou.....	1,850	210	Saint-Jean.....	321	414
Champlain (total, 360) part.....	95	18	Saint-Louis.....	69	57
Chibougamau.....	1,253	88	Saint-Pierre.....	11	142
d'Iberville.....	790	260	Simard.....	859	73
			Témiscamingue (total, 121) part.....	HW 589 LW 575	66
			Waswanipi.....	830	75



## 5.—Elevations and Areas of Principal Lakes, by Province—continued

Province and Lake	Elevation ft.	Area sq. miles	Province and Lake	Elevation ft.	Area sq. miles
<b>Ontario—</b>			<b>Manitoba—concluded</b>		
Abitibi (total, 369) part.....	868	313	Walker.....	679	62
Big Trout Lake.....	770	264	Waterhen.....	829	90
Dog.....	1,378	61	Wekusko.....	844	64
Eagle.....	1,192	140	Winnipeg.....	713	9,465
Erie (total, 9,889) part.....	572	4,912	Winnipegosis.....	833	2,103
Huron, including Georgian Bay (total, 23,860) part.....	580	15,353	Woods, Lake of the (total, 1,695) part (reservoir).....	1,060	69
Lac la Croix (total, 55) part.....	1,186	25			
Long.....	1,025	75	<b>Saskatchewan—</b>		
Lower Manitou.....	1,215	60	Amisk.....	964	168
Mille Lacs, Lac des.....	1,496	103	Athabasca (total, 3,120) part.....	699	2,180
Minnitaki.....	1,177	72	Besnard.....	1,278	72
Nipigon.....	855	1,870	Black Birch.....	1,517	54
Nipissing.....	640	350	Candle.....	1,621	56
Ontario (total, 7,313) part.....	245	3,849	C canoe.....	1,415	78
Rainy (total, 360) part (reser- voir).....	HW 1,108 LW 1,033	291	Churchill.....	1,382	213
Red.....	1,157	71	Cold (total, 138) part.....	1,756	46
St. Clair (total, 432) part.....	575	270	Cree.....	1,570	446
St. Francis, River St. Lawrence (total, 88) part.....	154	25	Cumberland.....	871	98
St. Joseph.....	1,226	187	Deschambault.....	1,072	209
Sandy.....	906	270	Doré.....	1,506	248
Seul (reservoir).....	1,170	539	Ile à la Crosse.....	1,380	166
Simcoe.....	718	288	Kamuchawie (total, 57) part.....	1,157	26
Stout (Berens River).....	1,039	50	Kipahigan (total, 60) part.....	966	31
Sturgeon (English River).....	1,342	110	Lac la Loche.....	1,460	76
Superior (total, 32,483) part.....	602	11,524	Lac la Plonge.....	1,476	90
Timagami.....	HW 965 LW 589	91	Lac la Ronge.....	1,198	552
Timiskaming (total, 121) part.....	HW 575 LW 1,294	55	Last Mountain.....	1,606	89
Trout (English River).....	1,294	156	Montreal.....	1,608	162
Woods, Lake of the (total, 1,695) part (reservoir).....	1,060	953	Nomeau (total, 80) part.....	872	72
			Nemeiben.....	1,259	63
			Peter Pond.....	1,382	302
			Pinehouse.....	1,262	159
			Primrose (total, 188) part.....	1,964	180
			Quill.....	1,703	236
			Reindeer (total, 2,467) part.....	1,150	2,096
			Saskatchewan.....	1,827	171
			Sisipuk (total, 103) part.....	919	32
			Smoothstone.....	1,573	110
			Tazin.....	1,130	156
			Wollaston.....	1,300	796
<b>Manitoba—</b>			<b>Alberta—</b>		
Athapuskow.....	956	104	Athabasca (total, 3,120) part.....	699	940
Beaverhill.....	651	70	Beaverhill.....	2,202	80
Cedar.....	830	517	Buffalo.....	2,566	56
Clearwater (Atikameg).....	855	112	Calling.....	1,949	55
Cormorant.....	840	174	Claire.....	699	545
Cross (Nelson River).....	679	274	Cold (total, 138) part.....	1,756	94
Dauphin.....	853	200	Lac la Biche.....	1,784	94
Dog.....	811	64	Lesser Slave.....	1,892	461
Gods.....	585	319	Mamawi.....	695	64
Goose.....	922	53	Peerless.....	2,269	75
Granville.....	850	181	Primrose (total, 188) part.....	1,964	8
Island.....	744	550	Sullivan (variable).....	2,651	62
Kamuchawie (total, 57) part.....	1,157	31	Utikuma.....	2,115	85
Kipahigan (total, 60) part.....	968	29			
Kiskitto.....	696	65	<b>British Columbia—</b>		
Kiskittogisu.....	709	99	Adams.....	1,334	52
Kississing.....	920	138	Atlin (total, 299) part.....	2,192	298
Manitoba.....	814	1,817	Babine.....	2,332	194
Moose.....	838	525	Chilko.....	3,842	75
Nomeau (total, 80) part.....	873	8	Eutsuk.....	2,817	96
Northern Indian.....	760	150	François.....	2,345	91
Nueltin (total, 850) part.....	875	270	Harrison.....	30	87
Oxford.....	612	155	Kootenay.....	1,745	168
Paint.....	615	54	Kotoho.....	1,970	31
Pelican (west of Lake Winnipe- gosis).....	838	80	Lower Arrow.....	1,370	59
Playgreen.....	711	257	Okanagan.....	1,123	136
Red Deer (west of Lake Win- nipegosis).....	875	100	Ootsa.....	2,666	50
Reed.....	915	78	Quesnel.....	2,380	100
Reindeer (total, 2,467) part.....	1,150	371	Shuswap.....	1,142	120
St. Martin.....	801	125			
Setting.....	737	49			
Sipiwesk.....	601	201			
Sisipuk (total, 103) part.....	919	71			
Southern Indian.....	835	1,060			
Swan.....	850	118			
Talbot.....	845	72			



## 5.—Elevations and Areas of Principal Lakes, by Province—concluded

Province and Lake	Elevation ft.	Area sq. miles	Province and Lake	Elevation ft.	Area sq. miles
<b>British Columbia—concluded</b>			<b>Northwest Territories—concluded</b>		
Stuart.....	2,230	139	Clinton-Colden.....	1,226	253
Tagish (total, 130) part.....	2,152	78	Dubawnt.....	764	1,600
Takla.....	2,260	102	Faber.....	753	163
Teslin (total, 142) part.....	2,250	58	Franklin.....	49	175
Upper Arrow.....	1,401	88	Gras, de.....	1,365	345
<b>Yukon Territory—</b>			Great Bear.....	390	12,275
Aishihik.....	3,001	107	Great Slave.....	512	10,980
Atlin (total, 299) part.....	2,192	1	Hardisty.....	643	107
Kluane.....	2,525	184	Hottah.....	640	377
Kusawa.....	2,200	56	Kaminuriak.....	320	360
Laberge.....	2,100	87	La Martre.....	870	685
Tagish (total, 130) part.....	2,152	52	Mac Kay.....	1,415	250
Teslin (total, 142) part.....	2,239	84	Maguse.....	..	540
<b>Northwest Territories—</b>			Marian.....	513	90
Aberdeen.....	261	475	Nuelin (total, 850) part.....	875	580
Artillery.....	1,190	153	Nutarawit.....	..	350
Aylmer.....	1,230	340	Pelly.....	501	331
Baker.....	30	975	Point.....	1,229	295
			Rae.....	692	74
			Schultz.....	250	110
			Thaolintoa.....	496	160
			Yathkyed.....	461	860

## Subsection 2.—Coastal Waters

The coastline of Canada, one of the longest of any country in the world, comprises the following estimated mileages:—

**Mainland—**

Atlantic, 6,110; Pacific, 1,580; Hudson Strait, 1,245; Hudson Bay, 3,155; Arctic, 5,770; total, 17,860 miles.

**Islands—**

Atlantic, 8,680; Pacific, 3,980; Hudson Strait, 60; Hudson Bay, 2,305; Arctic, 26,785; total, 41,810 miles.

A comprehensive description of the coastal waters of Canada would require information from sciences such as oceanography, marine biology and meteorology. However, the basic factor in any study of the oceanic-continental margin is the physical relief of the sea floor, and the scope of the information presented here is therefore restricted to this and a few salient features of the Atlantic, Arctic and Pacific marginal seas surrounding Canada.

**Atlantic.**—Along this coastal area, the sea has inundated valleys and lower parts of the Appalachian Mountains as well as those of the Canadian Shield. The submerged continental shelf, protruding seaward from the shore, effects the transition from continental to oceanic conditions. This shelf is distinguished by great width and diversity of relief. From the coast of Nova Scotia its width varies from 60 to 100 miles, from Newfoundland 120 to 50 miles (at the entrance of Hudson Strait), and northward it merges with that of the Arctic Ocean. The outer edge of the shelf, known as the continental shoulder, is of varying depths of from 100 to 200 fathoms before the shelf suddenly gives way to the steep declivity leading to abyssal depths. The over-all gradient of the Atlantic continental shelf is slight but the whole area is studded with shoals, plateaux, banks, ridges and islands and the coasts of Nova Scotia and Newfoundland are rugged and fringed with islets and shoals. Off Nova Scotia the 40-fathom line lies at an average of 12 miles from the shore and constitutes the danger line for coastal shipping. The whole floor of the marginal sea appears to be traversed by channels and gullies cutting well into the shelf.

The main topographical features of the Atlantic marginal sea floor are attributed to glacial origin but land erosion is an important factor. Eroded materials are carried seaward by rivers, ice and wind, and wave action against cliffs and shore banks washes away enormous masses that are deposited over the surrounding sea floor. The topography of the continental sea floor is therefore constantly changing and navigation charts of Canada's eastern seaboard must be continuously revised.

Hudson Bay and Hudson Strait bite deeply into the Continent. Hudson Bay is an inland sea 250,000 sq. miles in area having an average depth of about 70 fathoms; the greatest charted depth in the centre of the Bay is 141 fathoms.

Hudson Strait separates Baffin Island from the continental coast and connects Hudson Bay with the Atlantic Ocean. It is 430 miles long and from 37 to 120 miles wide and its greatest charted depth of 481 fathoms is close inside the Atlantic entrance. Great irregularities of the sea floor are indicated but, except in inshore waters, few navigation hazards have been located.

**Arctic.**—The submerged plateau extending from the northern coast of North America is a major part of the great continental shelf surrounding the Arctic Ocean, on which lie all the Arctic islands of Canada, Greenland, and most of the Arctic islands of Europe and Asia. This shelf is most uniformly developed north of Siberia, where it is about 500 miles wide; north of North America it surrounds the western islands of the Archipelago and extends 50 to 300 miles seaward from the outermost islands.

The topography of the floor of the submerged part of this continental margin is only partly explored but sufficient has been charted to indicate, in common with continental shelves throughout the world, an abrupt break at the oceanward edge to the relatively steep declivity of the continental slope. This slope borders the western side of the Queen Elizabeth Islands and, from it, deep well-developed troughs enter between the groups of islands. Sills across Davis Strait, Barrow Strait and other channels, on which the depth is about 200 fathoms, interrupt the network of deep troughs and separate the Arctic basin from the Atlantic.

That part of the continental shelf bordering the Arctic Ocean in the vicinity of the Queen Elizabeth Islands (see p. 16) is the subject of extensive study. Since 1959 a party based at the joint Canadian-United States weather station at Isachsen on Ellef Ringnes Island has been investigating the oceanography, hydrography, submarine geology, gravity, geomagnetic features and crustal seismic properties of the continental shelf area, carrying out physiographic, hydrological, permafrost and glaciological studies on the islands of the region, mapping the nature, distribution and movement of the sea ice, and running basic topographic control surveys. This work is continuing, with a party in the field from March to September each year, and should eventually cover all of the unmapped parts of the shelf between Greenland and Alaska. The investigations should yield detailed and accurate information on the physical and chemical composition and dynamic characteristics of the Arctic oceanic waters; the bathymetry of the continental shelf and slope and the straits and sounds of the Archipelago; the topography and structure of the shelf and the nature of its sediments, its underlying rocks and possible mineral resources; the structure and physical characteristics of the northern edge of the North American continental platform and its contact with the Arctic Ocean basin; the factors controlling the development of the Arctic landscape and the evolution of the islands; and the changes in sea level, glaciers, sea ice and climate in the recent geological past.

**Pacific.**—The marginal sea of the Pacific differs strikingly from the other marine zones of Canada. The hydrography of British Columbia is characterized by bold, abrupt relief—a repetition of the mountainous landscape. Numerous inlets penetrate the mountainous coast for distances of 50 to 75 miles. They are usually a mile or two in width and of considerable depth, with steep canyon-like sides. From the islet-strewn coast, the continental shelf extends from 50 to 100 sea miles to its oceanward limit where depths of about 200 fathoms are found. There the sea floor drops rapidly to the Pacific deeps, parts of the western slopes of Vancouver Island and the Queen Charlotte Islands lying

only four miles and one mile, respectively, from the edge of the declivity. These great detached land masses are the dominant features of the Pacific marginal sea. As is to be expected in a region so irregular in hydrographic relief, shoals and pinnacle rocks are numerous, necessitating cautious navigation.

### Subsection 3.—Islands

The largest islands of Canada are in the North and all experience an arctic climate. The northern group extends from the islands in James Bay to Ellesmere Island which reaches 83° 07'N. Those in the District of Franklin lie north of the mainland of Canada and are generally referred to as the Canadian Arctic Archipelago; those in the extreme north—lying north of the M'Clure Strait—Viscount Melville Sound—Barrow Strait—Lancaster Sound water passage—are known as the Queen Elizabeth Islands.

On the West Coast, Vancouver Island and the Queen Charlotte Islands are the largest and the most important but the coastal waters are studded with many small rocky islands.

The Island of Newfoundland forming part of the Province of Newfoundland, the Province of Prince Edward Island, Cape Breton Island forming part of the Province of Nova Scotia, Grand Manan and Campobello Islands forming part of the Province of New Brunswick, and Anticosti Island and the Magdalen group included in the Province of Quebec are the largest islands off the East Coast.

Notable islands of the inland waters include Manitoulin Island (1,068 sq. miles in area) lying in Lake Huron, the so-called Thirty Thousand Islands of Georgian Bay and the Thousand Islands in the outlet from Lake Ontario into the St. Lawrence River.

### 6.—Areas of Principal Islands, by Region

Region and Island	Area	Region and Island	Area
	sq. miles		sq. miles
<b>Arctic Archipelago—</b>		<b>Arctic Archipelago—concluded</b>	
Northern Region (Queen Elizabeth Islands)—		Southern Region—concluded	
Ellesmere.....	82,119	Stefansson.....	2,890
Devon.....	20,861	Air Force.....	596
Melville.....	16,369	Wales.....	439
Axel Heiberg.....	15,779	Rowley.....	436
Bathurst.....	7,609	Vansittart.....	386
Prince Patrick.....	6,081	Russell.....	349
Ellef Ringnes.....	5,139	Jens Munk.....	330
Cornwallis.....	2,670	White.....	301
Amund Ringnes.....	2,515	Bray.....	281
Mackenzie King.....	1,922	Foley.....	261
Borden.....	1,344	Koch.....	183
Cornwall.....	1,292	Matty.....	173
Eglinton.....	551	Royal Geographical Society	
King Christian.....	448	(the larger of two).....	173
Lougheed.....	413	Jenny Lind.....	170
Brock.....	396	Crown Prince Frederic.....	170
Cameron.....	396	Prescott.....	167
Byam Martin.....	376	Loks Land.....	164
Meighen.....	293	Melbourne.....	149
Graham.....	293	Tennent.....	118
North Kent.....	258	Gateshead.....	86
Emerald.....	251		
Coburg.....	141	<b>Hudson Bay and Strait—</b>	
Little Cornwallis.....	139	Southampton.....	15,700
Baillie Hamilton.....	114	Coats.....	2,206
		Mansel.....	1,285
<b>Southern Region—</b>		Akimiski (James Bay).....	1,137
Baffin.....	183,810	Belcher (total for group).....	1,118
Victoria.....	81,930	Nottingham.....	543
Banks.....	23,230	Resolution.....	387
Prince of Wales.....	12,830	Salisbury.....	312
Somerset.....	9,370	Big.....	310
King William.....	4,955	Akpatok (Ungava Bay).....	296
Bylot.....	4,200	Charlton (James Bay).....	119
Prince Charles.....	3,639	Edgell.....	106
		Killinek.....	104



## 6.—Areas of Principal Islands, by Region—concluded

Region and Island	Area	Region and Island	Area
	sq. miles		sq. miles
<b>Pacific Coast—</b>		<b>Pacific Coast—concluded</b>	
Vancouver.....	12,408	Gribbell.....	86
Queen Charlotte.....	3,705	<b>Atlantic Coast—</b>	
Graham.....	2,491	Newfoundland—	
Moresby.....	991	Labrador Coast—	
Louise.....	108	South Aulatsivik.....	167
Lyell.....	63	Okak (total for two).....	113
Kunghit.....	52	Tunungayualok.....	72
Princess Royal.....	870	North Aulatsivik.....	53
Pitt.....	537	<b>Island—</b>	
Banks.....	400	Newfoundland.....	43,359
King.....	324	Fogo.....	95
Porcher.....	199	New World.....	73
Nootka.....	198	<b>Gulf of St. Lawrence—</b>	
Aristazabal.....	167	Cape Breton.....	3,970
Gilford.....	151	Anticosti.....	3,043
Hawkesbury.....	143	Prince Edward.....	2,184
Hunter.....	136	Magdalen (total for group).....	88
Calvert.....	118	Shippegan.....	59
Texada.....	117	<b>Bay of Fundy—</b>	
Swindle.....	109	Grand Manan.....	55
Quadra.....	103		
McCauley.....	102		
Gil.....	94		
Roderick.....	88		

## Subsection 4.—Mountains and Other Heights

The predominant geographical feature in Canada is the Great Cordilleran Mountain System which contains many peaks over 10,000 feet in height. The highest peak in Canada is Mount Logan in the St. Elias Mountains of Yukon Territory, which rises 19,850 feet above sea level. The highest elevations in all parts of the country are shown in Table 7 in feet above mean sea level.

## 7.—Principal Heights in each Province and Territory

NOTE.—Certain peaks, indicated by an asterisk (\*), form part of the boundary between political divisions. Although their bases technically form part of both areas, they are listed only under one to avoid duplication. Elevations are given in feet above mean sea level.

Province and Height	Elevation	Province and Height	Elevation
	ft.		ft.
<b>Newfoundland</b>		<b>Nova Scotia</b>	
Long Range Mountains—		(Spot height—Cape Breton).....	1,747
Lewis Hills.....	2,672	Nutby Mountain (Cobequid).....	1,204
Gros Morne.....	2,644	Dalhousie Mountain (Cobequid).....	1,115
Mount St. Gregory.....	2,251	North Mountain (4 miles NE of West Bay Road).....	875
Gros Paté.....	2,152	Sporting Mountain.....	675
Blue Mountain.....	2,128		
Table Mountain.....	1,900-1,950	<b>New Brunswick</b>	
Blue Hills of Couteau—		Mount Carleton.....	2,690
Peter Shout.....	1,600-1,650	Moose Mountain.....	1,490
<b>Central Highlands—</b>			
Main Topsail.....	1,822	<b>Quebec</b>	
Mizzen Topsail.....	1,761	Appalachian Mountains—	
<b>Torngat Mountains—</b>		Mount Jacques-Cartier (Shickshocks)....	4,160
Cirque Mountain.....	5,160	Mount Richardson.....	3,887
Mount Cladonia.....	4,725	Mount Albert—	
Mount Eliot.....	4,550	Albert Nord.....	3,554
Mount Tetragona.....	4,500	Albert Sud.....	3,775
Quartzite Mountain.....	3,930	Mount Logan.....	3,700
Blow Me Down Mountain.....	3,880	Mégantic Mountain.....	3,550
<b>Kaumajet Mountains—</b>			
Bishops Mitre.....	4,060		
Finger Hill.....	3,390		

## 7.—Principal Heights in each Province and Territory—continued

Province and Height	Elevation	Province or Territory and Height	Elevation
	ft.		ft.
<b>Quebec—concluded</b>		<b>Alberta—concluded</b>	
<b>Appalachian Mountains—concluded</b>		<b>Rocky Mountains—concluded</b>	
Mattawa Mountain.....	3,500	Mount Fryatt.....	11,026
Bayfield Mountain.....	3,470	Mount Chown.....	10,930
Roundtop (Sutton Mountains).....	3,175	Mount Wilson.....	10,700
Hereford Mountain.....	2,775	Clearwater Mountain.....	10,420
Barn Mountain.....	2,750	Mount Coleman.....	10,286
Orford Mountain.....	2,750	Eiffel Peak.....	10,101
Pinnacle Mountain.....	2,200	Pinnacle Mountain.....	10,062
Brome Mountain.....	1,750	Mount Rundle.....	9,838
Shefford Mountain.....	1,725	The Three Sisters.....	9,744
<b>Shield—</b>		Mount Eisenhower.....	9,030
Mount Tremblant.....	2,900	Mount Edith.....	8,380
Mount Sainte-Anne.....	2,625		
Mount Sir Wilfrid.....	2,569		
<b>Monteregian Hills—</b>		<b>British Columbia</b>	
Saint-Hilaire Mountain.....	1,350	Vancouver Island Ranges—	
Yamaska Mountain.....	1,350	Mount Albert Edward.....	6,868
Rougemont.....	1,200	Mount Arrowsmith.....	5,962
Mount Royal.....	763	<b>Coast Mountains—</b>	
Mount Saint-Grégoire.....	750	Mount Waddington.....	13,260
		St. Elias Mountains—	
<b>Ontario</b>		*Mount Fairweather.....	15,300 <sup>2</sup>
Ogidaki Mountain.....	2,183	*Mount Root.....	12,860 <sup>3</sup>
Batchawana Mountain.....	2,142	<b>Columbia Mountains—</b>	
Tip Top Mountain.....	2,099	Monashee Mountains—	
Niagara Escarpment—		Mount Begbie.....	8,956
Osler Bluff.....	1,675	Storm Hill.....	5,300
Blue Mountains.....	1,650	<b>Selkirk Mountains—</b>	
Caledon Mountain.....	1,400	Mount Dawson.....	11,023
High Hill.....	1,163	Adamant Mountain.....	10,980
Mount Nemo.....	1,000	Grand Mountain.....	10,842
		Iconoclast Mountain.....	10,646
		Mount Rogers.....	10,546
<b>Manitoba</b>		<b>Rocky Mountains—</b>	
Porcupine Hills.....	2,700	Mount Robson.....	12,972
Duck Mountain.....	2,375	Mount Clemenceau.....	12,001
Riding Mountain.....	2,000	Mount Goodsir.....	11,686
		Mount Bryce.....	11,507
<b>Saskatchewan</b>		Resplendent Mountain.....	11,240
Cypress Hills.....	4,567 <sup>1</sup>	Mount King George.....	11,226
Wood Mountain.....	3,275	Consolation Mountain.....	11,200
Vermilion Hills.....	2,500	The Helmet.....	11,160
		Whitehorn Mountain.....	11,130
<b>Alberta</b>		Mount Huber.....	11,051
Rocky Mountains—		Mount Freshfield.....	10,945
*Mount Columbia.....	12,294 <sup>2</sup>	Mount Mummery.....	10,918
The Twins.....	12,085	Mount Vaux.....	10,891
Mount Alberta.....	11,874	*Mount Ball.....	10,865 <sup>2</sup>
*Mount Assiniboine.....	11,870 <sup>2</sup>	Mount Geikie.....	10,843
Mount Forbes.....	11,852	Bush Mountain.....	10,770
Mount Temple.....	11,625	Mount Sir Alexander.....	10,740
*Mount Kitchener.....	11,500	Churchill Peak.....	10,500
*Mount Lyell.....	11,495 <sup>2</sup>	Mount Stephen.....	10,495
*Mount Hungabee.....	11,457 <sup>2</sup>	Cathedral Mountain.....	10,464
Mount Athabasca.....	11,452	Mount Gordon.....	10,346
*Mount King Edward.....	11,400 <sup>2</sup>	The President.....	10,297
Mount Brazeau.....	11,386	Odaray Mountain.....	10,175
*Mount Victoria.....	11,365 <sup>2</sup>	Mount Laussedat.....	10,035
*Snow Dome.....	11,340 <sup>2</sup>	Mount Burgess.....	8,473
Stutfield Peak.....	11,320		
*Mount Joffre.....	11,316 <sup>2</sup>	<b>Yukon Territory</b>	
*Deltaform Mountain.....	11,235 <sup>2</sup>	St. Elias Mountains—	
Mount Lefroy.....	11,230 <sup>2</sup>	Mount Logan.....	19,850
*Mount Alexandra.....	11,214 <sup>2</sup>	*Mount St. Elias.....	18,008 <sup>4</sup>
*Mount Sir Douglas.....	11,174 <sup>2</sup>	Lucania Mountain.....	17,147
Mount Woolley.....	11,170	King Peak.....	17,130
*Lunette Peak.....	11,150 <sup>2</sup>	Mount Steele.....	16,644
Mount Hector.....	11,148	Mount Wood.....	15,885
Diadem Peak.....	11,070	*Mount Vancouver.....	15,700 <sup>4</sup>
Mount Edith Cavell.....	11,033	*Mount Hubbard.....	15,013 <sup>4</sup>
		Mount Walsh.....	14,780
		*Mount Alverstone.....	14,500 <sup>4</sup>

For footnotes, see end of table.

## 7.—Principal Heights in each Province and Territory—concluded

Territory and Height	Elevation	Territory and Height	Elevation
	ft.		ft.
<b>Yukon Territory—concluded</b>		<b>Northwest Territories—concluded</b>	
St. Elias Mountains—concluded		Arctic Islands—concluded	
McArthur Peak.....	14,253	Ellesmere—concluded	
Mount Augusta.....	14,100	Mount Townsend.....	7,200*
Mount Kennedy.....	13,905	Mount Jeffers.....	6,500*
Mount Strickland.....	13,818	Mount Wood.....	6,900*
Mount Newton.....	13,811	Mount Cheops.....	5,200*
Mount Cook.....	13,760	Devon—	
Mount Craig.....	13,250	Ice Cap.....	6,190
Badham Mountain.....	12,625	Mackenzie King—	
Mount Malaspina.....	12,150	Leffingwell Crags.....	1,500
Mount Seattle.....	10,082	Banks—	
<b>Northwest Territories</b>		Durham Heights.....	2,213
Arctic Islands—		Victoria—	
Baffin—		Shaler Mountains.....	2,000
Penny Highland (Ice Cap).....	8,200-8,500	Mount Bumpus.....	1,700
Mount Thule.....	5,800*	Mainland—	
Cockscomb Mountain.....	5,300*	Mount Sir James MacBrien.....	9,062
Barnes Ice Cap.....	3,700*	Franklin Mountains—	
Knife Edge Mountain.....	2,493*	Cap Mountain.....	5,175
Ellesmere—		Mount Clark.....	4,798
United States Range.....	9,600*	Pointed Mountain.....	4,610
Commonwealth Mountain.....	7,500*	Nahanni Butte.....	4,579
		Richardson Mountains—	
		Mount Goodenough.....	3,219

<sup>1</sup> The summit of the Cypress Hills, with an elevation of 4,810 feet, is in Alberta.  
British Columbia boundary.    <sup>2</sup> Part of the British Columbia-Alaska boundary.

Alaska boundary.    <sup>3</sup> Approximate.

<sup>2</sup> Part of the Alberta-  
<sup>4</sup> Part of the Yukon-

## Section 2.—Geology and Economic Minerals of Canada\*

The bedrock foundation of Canada and its adjacent continental shelves seem rigid and unchanging to human eyes, yet, in terms of geological time, these rocks and their contained mineral wealth represent only a momentary stage in the evolution of the Continent, an evolution which began more than 4,000,000,000 years ago. Geological study of most of the present land surface of Canada has shown that at various periods and in various regions dark molten rocks rose from great depths, volcanoes erupted on the ancient land and sea floors, thick sequences of sediments accumulated, granites were either intruded as molten magma or derived from earlier rocks during intense folding and mountain building, erosion wore down or subdued the older mountain chains, shallow seas repeatedly encroached on and receded from the Continent of today, continental glaciers covered most of Canada and, as part of these geological processes, valuable minerals and fossil fuels became concentrated under exceptionally favourable conditions. These interrelated geological processes have produced the buried crust and the present face of Canada. They control the distribution of its economic mineral deposits, its physiography and, in large part, its present and potential land use.

To introduce some relatively simple concepts, let us go back in geological time and select a few examples in which erosion of land, deposition of the resulting detritus, and a series of favourable circumstances have concentrated valuable minerals for man's use. Geological processes are best understood when they can be observed in action at the earth's surface or in relatively shallow lakes or oceans. Modern Atlantic waves, pounding on exposed cliffs of the Maritime Provinces, greatly accelerate the rate of erosion. Fallen blocks are rounded and abraded on the cobble beaches, while waves and currents sweep the sand and rock flour along the coast to sandy beaches or spits, or carry them seaward to add to the slowly growing sedimentary beds of the continental shelf. This natural erosion and

\* Prepared by W. D. McCartney with Grenville and Interior Plains sections from an earlier report by A. H. Lang and revision of Cordilleran section by D. J. T. Carson, Geological Survey of Canada.

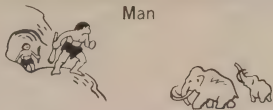
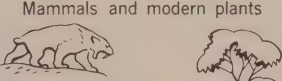



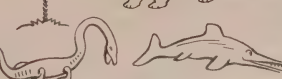

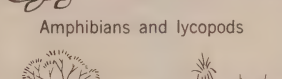






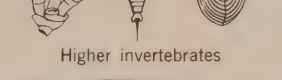

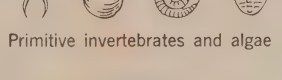


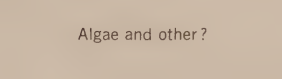

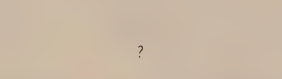







milling action also releases valuable minerals from their enclosing rock. In almost all cases, these valuable minerals are dispersed or only slightly concentrated but, given a rare combination of favourable erosional and current conditions, and because of the relatively high density and physical and chemical stability of some valuable minerals, they may lag behind their lighter fellows of equal size and become concentrated as placer deposits of commercial value. Gold has been recovered in modest quantities from the beach sands of Cunard Cove, Nova Scotia, and is still being freed from the nearby cliffs. More commonly, placer deposits result from the erosion of inland areas and subsequent river transport. The famous gold placer deposits of the Yukon were formed in river channels more than 1,000,000 years ago, at a time when mastodons and sabre-toothed tigers roamed the area. In Nova Scotia, at Gay's River, gold was similarly but less efficiently concentrated in coarse gravels about 350,000,000 years ago, at a time when giant reptiles were the dominant form of life on earth. These gravels were subsequently covered by thousands of feet of sands and muds, washed from the newly formed Appalachian Mountains.

The probable history of the vast uranium deposits of Elliot Lake, Ontario, even though it began more than 1,600,000,000 years ago, has been deciphered by geologists. Geological studies on the surface, underground and in the laboratory indicate that a granitic land mass of modest relief lay to the north of the present Elliot Lake district. Over an extended stable period, these rocks were deeply weathered and all but the most chemically inert minerals such as quartz were broken down to clay and disintegrated materials. At the beginning of Aphebian time, uplift or tilting of this weathered land occurred and mechanical, rather than chemical, erosion became dominant. Rivers swept the rotted upper layers of decomposed rock to the southeast. Quartz pebbles moved along and became rounded in the river channels and, because they were the largest remaining materials, formed blankets of gravel, and filled channels as the gradient and current of the rivers decreased. At the same localities, fine-grained sands and clays continued to be swept seaward. However, even small grains of abnormally heavy minerals such as uraninite, zircon and monazite, which had also resisted earlier chemical decomposition, could not be carried so readily by the waning currents and came to rest in the spaces between the rounded pebbles of quartz. Following this first flushing of the deeply weathered land mass, erosion and transport continued and many thousands of feet of Huronian sediments buried the uranium-rich quartz gravels. Subsequent lithification, folding, mineralogical changes, and further intervals of erosion during 1,500,000,000 years produced folded, uraniferous quartz conglomerates which lie below and locally intersect the present earth surface. These exposed rocks were used to prepare the geological map of the district published by the Geological Survey of Canada in 1925. In 1952, after the uranium content of these conglomerates had been deduced by exploration geologists, this geological map proved invaluable because it outlined the sinuous distribution of the potential ore-bearing formations and accelerated the development of this large mining camp.

The above examples outline only one set of many dynamic geological processes. Geological maps and knowledge of such things as ancient geography, direction of flow of ancient rivers, and the character and degree of weathering of ancient land masses should be known if intelligent evaluation is to be made of the long-range mineral potential of the nation for undiscovered placer deposits of the above types. Apart from uranium, most mineral production comes from a wide variety of other types of deposit. Some, such as asbestos, are formed by alteration of particular rocks of high iron and magnesium content. In other cases, under favourable conditions, major parts of the rock itself can be mined or quarried. Examples include limestone, nepheline syenite, rock salt, gypsum and potash. Space does not permit an attempt here to point out the interrelation of mineral deposits to their geological setting and, in many cases, much remains to be learned about the origin of many types of base and precious metal ores. However, ore deposits are not randomly distributed 'freaks', but comprise rare concentrations of materials formed under particularly favourable geological conditions during the building of the Continent. Efficient exploration by mining companies and evaluation of the mineral potential of the nation depend on geological information and knowledge, augmented by geophysical and geochemical tech-

# GEOLOGICAL TIME CHART

GEOLOGICAL TIME CHART					
ERA	PERIOD		CHARACTERISTIC LIFE	CANADIAN OROGENIES	TOTAL ESTIMATED TIME IN YEARS
CENOZOIC	RECENT PLEISTOCENE		Man 		1,200,000
	TERTIARY	PLIOCENE	Mammals and modern plants 		
		MIOCENE			
		OLIGOCENE			
		EOCENE PALEOCENE			
MESOZOIC	CRETACEOUS		Reptiles and gymnosperms 	Laramide 	65,000,000
	JURASSIC			Columbian 	
	TRIASSIC			Nassian Inklinian 	
				Tahltanian Appalachian 	
PALAEOZOIC	CARBONIFEROUS	PERMIAN	Amphibians and lycopods 		225,000,000
		PENNSYLVANIAN			
		MISSISSIPPIAN			
		DEVONIAN			
		SILURIAN	Fishes 	Caribooan Ellesmerian Acadian 	345,000,000
		ORDOVICIAN	Higher invertebrates 	Taconic 	
		CAMBRIAN			
PRECAMBRIAN	PROTEROZOIC	HADRYNIAN	Primitive invertebrates and algae		570,000,000
		HELIKIAN		Grenville 	945,000,000
		APHEBIAN	Stromatolites	Elsonian 	1,370,000,000
	ARCHAEN		Algae and other ?	Hudsonian 	1,735,000,000
				Kenoran 	2,490,000,000
					3,200,000,000 or more

SCALE OF MILES

0 200 400 600



PROVINCE LAST OROGENY





niques. By 1966, geological maps had been published covering about 75 p.c. of Canada's land surface, and geophysical maps showing variations in magnetic intensity caused by various types of rocks had been published by federal and provincial agencies covering 38 p.c. of the country as well as parts of the continental shelf. (See also pp. 32-33.)

The primary geological subdivisions of Canada are outlined in the following sections. The Canadian Shield forms the ancient nucleus of the Continent. As well as comprising the vast areas exposed in Central and Northern Canada, the Shield extends beneath the veneer of younger marine sediments exposed at the present surface in the Hudson Bay region, some Arctic islands, the St. Lawrence Lowlands and the Interior Plains. West of the Interior Plains, and north and southeast of the Canadian Shield, deep, elongate troughs (geosynclines) developed. These geosynclines received sediments and volcanics which, by folding, were converted into the mountain belts of the Cordilleran, Innuitian and Appalachian regions.

**The Canadian Shield.**—Precambrian evolution of the present Canadian Shield extended over more than five sixths of known geological time. During this immense interval, many cycles of volcanism, sedimentation, intrusion, metamorphism, mountain building, erosion and ore formation have been completed. The complexities of this history have become better understood as the rate of geological reconnaissance mapping, with the support of helicopters since 1952, has increased and as absolute ages of minerals have been determined by isotopic ratios from about 1,500 well-distributed samples of the Canadian Shield. Many of the absolute ages represent the ages of four main orogenic periods, as indicated on the geological time chart facing p. 20. The facing map shows the eight structural provinces currently recognized in the Shield. Each structural province is defined by the equivalent isotopic ages of their terminal orogenies as well as being characterized by variations in rock types, degree of metamorphism, and dominant types of ore deposits. Following one or more major orogenies in a region, that portion involved was stabilized, and relatively undeformed younger Precambrian erosion products were deposited to form basins of cratonic cover rocks, most of which are shown on the map of the Shield. These relatively undeformed late Precambrian basins and remnants of early Palaeozoic sediments show that the Canadian Shield has been remarkably stable since late Precambrian time, subject only to encroachment of younger seas and varying degrees of uplift.

Pleistocene glaciation, with scouring of bedrock and deposition of clastic materials, has profoundly affected the present drainage and physiography of the region.

The rocks of the Superior and of the far smaller Slave and Eastern Nain structural provinces were intruded by granites and folded during the Kenoran orogeny about 2,500,000,000 years ago. The Superior province now comprises a succession of folded belts of volcanic and sedimentary rocks trending east-west, separated by considerably larger areas of granite gneiss and granitic rocks. The elongate remnants of folded greenstone belts within the granitic terrane are up to 300 miles in length. Parts of these folded belts are dominantly sedimentary greywackes and slates which include iron-formations but are not known to contain major sulphide ore deposits. Other parts comprise dominantly mafic, somewhat altered volcanics (greenstones), lesser but economically significant rhyolitic volcanics, various types of economic and non-economic iron-formations which are being mined at four or more localities, some greywacke, slate and graphitic slate and, in association with these rock types, massive pyritic ore deposits containing zinc, copper, silver and gold. Deposits of this type at Noranda, Timmins, Manitouwadge, Matagami and Chibougamau rank among the large base-metal deposits of the world. Famous gold-quartz vein deposits are mined in the greenstone belts at Timmins, Kirkland Lake and Noranda-Val d'Or areas. In the Slave province, structural trends are more irregular than in the Superior province, but the important gold veins of the Yellowknife district and gold deposits being evaluated south of Bathurst Inlet also lie in volcanic belts. Deposits associated with pegmatites of the late stages of Kenoran granites contain lithium, molybdenum, beryllium and caesium.

Following the Kenoran orogeny in the Superior province, thick sedimentary beds of Proterozoic age were derived from the erosion of the deformed Archæan rocks in the region north of Lake Huron, and basal conglomerates of the Huronian beds at Elliot Lake contain about one third of the reported uranium reserves of the world. Even younger undeformed beds and diabase sills about 100 miles northeast of Lake Huron form cratonic cover rocks about 2,100,000,000 years old and contain the famous silver-cobalt veins of the Cobalt mining camp. In the same general region, the noritic intrusions near Sudbury were later emplaced during the Hudsonian orogeny to yield the world-renowned nickel-copper-platinum deposits of the Sudbury basin. As a result of these geological processes of many types and of varied Precambrian age, a belt about 150 miles wide extends north-east from Lake Huron and lies to the northwest of the Grenville province. This belt has produced a great proportion of Canada's gold and base-metal production to date.

The Churchill province is exposed as a giant arc underlying northern Manitoba and Saskatchewan, much of the Northwest Territories, the northern tip of Quebec and the Labrador Trough. The rocks of the Churchill province and the much smaller Bear and Southern provinces were folded, metamorphosed to various degrees, and intruded by granitic rocks during the Hudsonian orogeny about 1,700,000,000 years ago. The general rock types of these provinces are similar to those of the Superior province. In the southwestern Churchill province in northern Manitoba, major nickel deposits with lesser copper are being mined from both gneisses and from metamorphosed mafic intrusions which lie adjacent to the boundary of the Superior province. Nickel-copper ore is also mined from contorted gneisses at Lynn Lake, and numerous massive sulphide base-metal deposits in greenstones have been exploited in the Flin Flon district. Farther north, beginning on the north shore of Lake Athabasca at the Beaverlodge uranium camp, a belt of greenstones, sediments and their metamorphosed equivalents extend northeastward to Hudson Bay. Rankin Inlet, near which nickel was formerly mined, lies at the eastern exposed end of this imperfectly known belt. Relatively inaccessible belts such as this, although seemingly favourable for ore deposits, have not been prospected nearly as intensively as similar geological environments in more populated areas. Most of Baffin Island is underlain by contorted rocks of the Churchill province. Of particular interest is the recent discovery and serious evaluation of an exceptionally high-grade iron deposit in northwestern Baffin Island. Of geological interest are intricately folded formations of marble in southern Baffin Island, a rock type generally uncommon in the pre-Grenville portions of the Canadian Shield. A greenstone belt in the Churchill province containing nickel and asbestos occurrences of potential economic interest lies at the northern tip of Quebec and extends easterly from Cape Smith, Hudson Bay. Of major importance is the extension of the Churchill province as the Labrador Trough south from Ungava Bay to its merging and metamorphic involvement with the Grenville province. Rocks of the Labrador Trough adjacent to and east of the older Superior province are not significantly metamorphosed but are converted to schists and gneisses farther to the east. The relatively unmetamorphosed western belt comprises slate, quartzite, dolomite and cherty iron-formation, with mafic volcanics abundant farther to the east. In many parts of the western trough, iron-formation has been closely folded and much of the silica removed. These enriched portions, together with their metamorphosed equivalents which extend into the Grenville province, now provide the bulk of Canada's iron ore production.

A large part of the Shield, extending from Georgian Bay to the Strait of Belle Isle, has long been recognized as forming a distinct segment called the "Grenville". It was named after the Grenville series, characterized by crystalline limestone, impure limy strata, and large areas of sedimentary gneisses in various stages of alteration to granite. The eastern part of the province contains large igneous intrusions of anorthosite. The age relations between Grenville strata and those of the neighbouring Superior province are puzzling. Near Sudbury, as well as at the south end of the Labrador Trough, beds can be traced across the boundary into more metamorphosed rocks of Grenville type. It is believed, therefore, that the distinctive features of the Grenville may be related more to the time and degree of metamorphism than to distinctions in the original age of deposition of



strata. The Grenville province contains an unusually large variety of mineral occurrences but has not been as important a producer as the Superior. Several fairly large deposits are mined, including those of nepheline syenite near Peterborough, iron of the magnetite variety at Bristol and Marmora, zinc and lead in the Ottawa Valley and iron and titanium near Havre St. Pierre. Large iron deposits are in production at the southern extension of the Labrador Trough.

The areas of undeformed Precambrian cratonic cover rocks shown on the map facing p. 21 represent dominantly clastic detritus washed into basins from the consolidated, nearby, older rocks. At times, marine incursions into these basins led to deposition of limestone and dolomite, and volcanics were deposited in others. Copper deposits similar to those of the Keweenaw Peninsula of Michigan, copper-uranium-vanadium in sandstones, and base metals in some of the limestones of the cover rocks could be present in this geological environment but economic deposits of this type have not yet been discovered.

**The Appalachian Region.**—This region comprises the Maritime Provinces and southeastern Quebec and is the northern continuation of a long belt of folded strata extending along the eastern side of the United States. It is on the site of a long, linear trough or geosyncline that existed mainly in Palaeozoic time in which great thicknesses of sedimentary and volcanic strata were laid down. The northwestern boundary of the region lies adjacent to the Canadian Shield and to the St. Lawrence Lowlands. The strata in the Appalachians have been folded and faulted along axes that strike northeasterly except for local regions such as the Gaspé Peninsula where strikes swing to the east. Thus, strata of different kinds and ages and some belts of intrusive rocks normally form northeasterly-trending bands, many of which are responsible for development and orientation of peninsulas, bays and ridges of the region. Two principal periods of orogeny called the Taconic and the Acadian have been recognized. The Taconic occurred near the close of Ordovician time and the Acadian about Middle Devonian time. In Canada the Taconic disturbances were fairly widespread, the Acadian were more so, affecting areas that were previously affected by the Taconic as well as areas that were not, and the Appalachian orogeny, which was a major feature in parts of the United States, was of minor and local importance.

Metamorphosed Precambrian rocks of Grenville type are exposed to form the Long Range of western Newfoundland and small areas in Cape Breton and New Brunswick. On the east flank of the Appalachian geosyncline, as exposed in southeast Newfoundland, younger Precambrian volcanics and sediments are relatively unaltered and were intruded by small granite bodies 580,000,000 years ago. Although Precambrian rocks probably underlie much of the central Appalachians, they are buried beneath the thick Palaeozoic sequence. Pyrophyllite in southeast Newfoundland is the only product being mined from Precambrian rocks in the Canadian Appalachians.

Cambrian slates, minor limestones and local areas of volcanics lie above and adjacent to Precambrian rocks. Massive sulphide deposits in schists derived from Cambrian volcanics in southern Cape Breton and southeast Quebec were formerly mined. The overlying Ordovician beds were formed at the early stage of development of the Appalachian geosyncline. From west to east, and depending on their position in the geosyncline, the thick Ordovician sections comprise limestone and/or slate in western Newfoundland and adjacent to the St. Lawrence Lowlands in southeast Quebec. Mineral occurrences of zinc and lead-zinc are currently being evaluated in dolomitic limestones. Of major economic importance are Ordovician submarine volcanic rocks and their metamorphic equivalents in north-central Newfoundland, the Bathurst district of northern New Brunswick, and the Eastern Townships of southeast Quebec. These rocks are the hosts for all the massive, pyritic base-metal deposits being mined and developed in the Canadian Appalachians. In particular, the Bathurst mining camp and its new smelter complex promises to be a major factor in the economy of the region for many years, and the Buchans mine in central Newfoundland has produced since 1928 from orebodies which contained more than 15,000,000 tons of ore. East of this Ordovician volcanic belt, thick deposits of slates and sandstones were formed at the same time as the mineral-bearing volcanics were



being deposited. Mineral deposits formed during sedimentation include the Wabana iron mine in southeast Newfoundland which terminated operations early in 1966 after about 70 years of continuous production. Some 490,000,000 years ago, molten ultramafic rocks rose from great depths and were emplaced as thin, tabular bodies mainly in the volcanic Ordovician areas. Subsequent alteration of parts of these folded, elongate bodies has produced the giant asbestos deposits of the Eastern Townships of Quebec, and one deposit being mined in northeast Newfoundland. Occurrences of nickel or chromite associated with the ultramafics seem of limited economic promise to date, although minor production has been attained. Silurian strata are rather similar to Ordovician rocks but are not known to contain large mineral deposits. Unlike the Ordovician submarine volcanics, some or most of the Silurian volcanics were formed on land. This may be one factor in the marked difference in known ore content of the two volcanic assemblages.

In Devonian time, granite batholiths were emplaced in the Maritime Provinces, and smaller stocks of the same age were intruded in Gaspé and southeastern Quebec. At this time, older beds were folded and metamorphosed to varying degrees, particularly near the margins of the granites. An important deposit currently being mined and supporting its smelter at Murdochville in central Gaspé will provide several tens of millions of tons of low-grade copper ore from altered limy slates above one buried granitic stock of Devonian age. Other similar deposits are being actively explored in the district. In Ordovician sediments near granites of Nova Scotia, scores of gold-bearing quartz veins were mined from 1862 to 1957 but the individual veins are not likely to be workable under present conditions. Fluorite in veins within Devonian granitic rocks at St. Lawrence, Newfoundland, have been mined since 1933 and currently yield all of Canada's production. Tungsten and molybdenum deposits associated with granites in central New Brunswick, southeast Quebec and southern Newfoundland are re-appraised periodically but have not been mined.

Following the folding and granite intrusion that formed the Appalachian Mountains, adjacent basins were rapidly filled with coarse and progressively finer-grained detritus eroded from the adjacent mountains. Some areas included marine beds, such as the petroliferous Albert shales of eastern New Brunswick which yield oil and gas. Other areas were the sites of rhyolitic volcanism early in Mississippian time, and rocks of one such centre in southern New Brunswick contain a deposit of tin, lead, zinc and molybdenum, which has been extensively investigated. After initial infilling of basins, shallow Mississippian seas encroached on the valleys and deposited limestones. Where evaporation exceeded the rate of saltwater inflow to these marine basins, evaporites were precipitated to form commercial deposits of rock salt and gypsum, and known occurrences of potash minerals. Native sulphur in unknown quantity is associated with evaporites in central Nova Scotia. A large deposit of barite with associated lead-zinc-silver ore is mined from replaced Windsor rocks at Walton, Nova Scotia, and many rather similar occurrences are known elsewhere in Windsor limestones. Many thousands of feet of clastic sediments were deposited after the Windsor seas retreated. These beds of Pennsylvanian age contain the commercial coal measures of Nova Scotia. In Triassic time, outpourings of basalt, particularly preserved adjacent to and below the Bay of Fundy, terminated rock-forming processes in the Appalachians. Subsequent erosion has yielded the present, fairly subdued topography of this former mountain chain.

**The Cordilleran Region.**—The Cordillera of Western Canada consists of three parallel northwest-trending geological and topographical systems. The Eastern System of western Alberta, eastern British Columbia, eastern Yukon, and western Northwest Territories includes the Rocky, Richardson, Franklin and Mackenzie Mountains and foothills, and several intervening plateaux. Comprising the Western System are the Coast Mountains along the west mainland of British Columbia, the St. Elias Mountains in southwest Yukon, the Queen Charlotte Islands and Vancouver Island. The Interior System lies between the Eastern and Western Systems. It contains the plateaux, plains and subdued mountain ranges of the interior of British Columbia and Yukon Territory.

Unmetamorphosed Precambrian to Cretaceous sedimentary strata form most of the Eastern System. These sedimentary strata, which have been uplifted several thousand feet by fault movements, are well exposed in the Rocky Mountains. The Interior System is composed largely of metamorphic, sedimentary and volcanic rocks of Precambrian to Mesozoic ages, which are intruded by numerous, generally unconnected, granitic stocks and batholiths. In places, these rocks are overlain by great thicknesses of Cretaceous and Tertiary volcanic and sedimentary strata. Flat-lying Tertiary basalt flows form many of the plateaux. In the Western System, the rugged Coast Range consists of almost continuous exposures of steeply eroded granitic rocks of Mesozoic and Tertiary ages flanked on both sides by late Palæozoic and Mesozoic volcanic rocks and by basins of Cretaceous and Tertiary sedimentary rocks.

During late Precambrian times, beds of quartzite, argillite, dolomite and other sedimentary rocks now comprising the Purcell and Windermere beds were deposited in the eastern Cordilleran geosyncline, a vast shallow sea that extended from south of the present Canada-United States border to the Arctic Ocean. From Cambrian until mid-Devonian time, sedimentary strata consisting of shale, quartzite and limestone continued to be deposited in the area which now forms the Eastern and Interior Systems. In southeastern British Columbia, the world-famous Sullivan zinc-lead orebody lies in Purcell beds and is thought to have formed during late Precambrian time.

Beginning in the mid-Devonian and lasting until early Jurassic, the Western System and most of the Interior System consisted of a deep oceanic trough in which accumulated submarine basalts and fine argillaceous and cherty sediments such as those of the Permo-Carboniferous Cache Creek Series and the Triassic Takla Series. Meanwhile, sedimentary strata were forming in the more shallow waters of the Eastern System, east of the present Rocky Mountain Trench. Thus, in the Rocky Mountains, Palæozoic limestones, dolomite, quartzite and shale are overlain in many places by similar Mesozoic rocks.

The first large granitic bodies were intruded into rocks of the Interior and Western Systems during early Jurassic time. They were composed mainly of granodiorite and quartz diorite, but ranged in composition from gabbro to granite. These intrusions were accompanied by folding, faulting and metamorphism. Although this orogeny may have been most intense during late Jurassic to early Cretaceous time, intrusion continued until early Tertiary time. Many mines in the Cordillera are related to Mesozoic and Tertiary intrusions. Uplift of the rocks during these processes created mountain chains and, by early Cretaceous time, rhyolites, andesites, basalts and sediments were being deposited in inter-mountain basins largely separated by the uplifted areas. Erosion of the mountains followed and, in late Cretaceous time, sandstones, conglomerate, shale and extensive beds of coal accumulated in large isolated basins such as that now occupied by the Nanaimo Series on Vancouver Island. Gradual uplift continued so that by Tertiary time the basins were very local and entirely continental. Sandstones and other sediments derived from elevated areas continued to be deposited in the low-lying valleys.

Uplift and mountain-building in the Eastern System was delayed until the Laramide Orogeny in early Tertiary time. Unlike the earlier orogenies to the west, no significant granitic bodies were intruded in the Eastern System. In many parts of the Rocky Mountains, Precambrian and Palæozoic strata were thrust several miles to the east along low-angle westward-dipping fault planes. Thus, these transported older rocks commonly came to rest above younger beds. At the same time and again in late Tertiary time, the eroded Western and Interior System rocks, as well as those of the Eastern System, were again uplifted. Erosion, including glacial scouring, which in places has continued to the present day, formed deep valleys in the elevated rocks and has produced the present configuration of the Coast Range, the Rockies and the intervening mountain chains.

In the Interior System, much lava was deposited on the plateaux at various times during the Tertiary Period, mainly in or about Miocene time. The lavas are chiefly basaltic and apparently welled from long fractures rather than from individual volcanoes. Sandstone, shale and volcanic ash were deposited in local freshwater basins in the same belt.



In latest Tertiary and Pleistocene times, some uplift and minor volcanic deposition occurred in the Western and Interior Systems. Very recent, post-glacial volcanic activity is represented by several well-preserved cinder cones in north, southwest and central British Columbia.

Glaciation, as in other parts of Canada, was widespread in the Cordillera during the Pleistocene Epoch, and glaciers persist today in many mountain systems, chiefly in the St. Elias and Coast Mountains and the Columbia Ice Field in the Rockies. A large part of the Yukon Territory, however, escaped Pleistocene glaciation because the high St. Elias Mountains barred moisture-laden winds from the Pacific to such an extent that ice did not accumulate in parts of the interior, despite the depressed temperatures of the time. This lack of glaciation was largely responsible for the preservation of the Klondike placer gold deposits.

The Cordilleran region has long been an important producer of economic minerals. Coal mining thrived over 100 years ago at Nanaimo on Vancouver Island and the gold rushes to the Klondike and Cariboo-Fraser Rivers regions resulted in the economic development of the Yukon and the interior of British Columbia. Present mineral production for the Cordillera is approximately one tenth of the Canadian total.

All parts of the Western and Interior Systems, except those covered by Tertiary plateau lavas and sediments, are favourable for the occurrence of metals. Metal occurrences are very minor in the Eastern System but appreciable amounts of oil and natural gas are found, mainly in the foothills.

Many of the metallic mineral deposits are related to granitic intrusions of the Jurassic to Tertiary intrusive cycle but others may have been present before the cycle and some were probably metamorphosed by the intrusions. Copper, gold, molybdenum and iron are the main metals produced in the Western System and western portions of the Interior System, whereas lead, zinc and silver are most important in the eastern parts of the Interior System. The ores in general are complex and a single mine may supply gold, silver, copper, lead and zinc.

The lead-zinc-silver mines of the eastern part of the Interior System in the Kootenay and Slocan districts of southeast British Columbia occur in Precambrian and lower Palaeozoic sedimentary rocks. The Precambrian Sullivan orebody of the Kootenay district is one of the largest lead-zinc-silver deposits in the world. Another large producing area is at Mayo in the Yukon Territory. Cadmium, antimony and bismuth are recovered from many of the lead-zinc-silver ores.

Most copper ores of the region are large low-grade sulphide deposits related to Mesozoic or Tertiary granitic bodies. These include the Bethlehem deposits at Highland Valley, British Columbia, the Britannia mine near Vancouver, and several deposits that will soon be mined in the Smithers, Stewart and Stikine areas of the northern part of the province. Many of these mines contain recoverable molybdenum. High-grade skarn copper deposits occur at Merritt in the interior of British Columbia and on Vancouver Island.

Owing to intense mineral exploration in recent years, British Columbia has become a major producer of molybdenum. Large deposits at Endako and a smaller high-grade deposit at Boss Mountain are at present being mined. They are related to Mesozoic batholiths. Other promising large deposits are undergoing exploration or development.

The gold-quartz veins of British Columbia appear to have been derived from Mesozoic and Tertiary batholiths. Only two deposits of this type are at present being mined and most gold produced in the Cordillera is derived as a by-product of copper, iron and lead-zinc mining. The rich placer deposits that sparked the beginning of the mining industry in the Cordillera are of minor modern importance.

Iron deposits containing magnetite are being mined on Vancouver Island, the Queen Charlotte Islands and Texada Island. They occur in skarn zones along the contacts between granitic intrusions and Triassic limestone. Precambrian sedimentary iron deposits in the Yukon Territory may be developed in the future.



Mercury was mined mainly at Pinchi Lake, British Columbia, during World War II. These occurrences are now being re-evaluated. Nickel is mined near Hope in British Columbia and tungsten is recovered from a deposit in the Northwest Territories adjacent to the Yukon Territory. High-grade, long-fibre asbestos is extracted from a peridotite body at Cassiar in northern British Columbia.

Coal beds in Lower and Upper Cretaceous and Tertiary sedimentary basins are found in many locations throughout the Cordillera. Past production was much greater than at present but the possibility of increased demand for coal may reactivate several mines. The main producing areas include Comox on Vancouver Island, Crowsnest coalfield in southwest British Columbia and Alberta, and Luscar in the Alberta foothills.

Although most of the oil and gas fields of Alberta and British Columbia are east of the Cordillera in the Interior Plains of Alberta, several large fields are found in the foothills. The important Turner Valley field, which was discovered in 1913 and has produced since 1936, contains large oil and gas reserves in a faulted anticline in Mississippian strata. Oil is found in Devonian reef limestone at Norman Wells in the Northwest Territories. Sulphur is an important by-product of many fields containing natural gas.

**Innuitian Region.**—North of the Arctic Plains and Plateaux, where Palæozoic limestones rest on Precambrian generally-stable crystalline rocks, deep crustal depressions were initiated in late Proterozoic time and received thick deposits of carbonates and shales (miogeosynclinal type) and, in northern Ellesmere Island, volcanics and greywackes (eugeosynclinal type). In the southern basins, Proterozoic sediments are mainly carbonates and coarse to fine clastic sediments. Overlying these conformably are thick layers of lower Palæozoic carbonates which are thicker and include more abundant dark shales to the north. Middle Ordovician gypsum beds extend in places across the southern basins. Carbonates are admixed with muds and sands in parts of the Upper Silurian to Middle Devonian beds, and the influx of these clastic materials probably reflects relatively minor orogenies and periodic uplifts such as the Boothia Arch in the region. Folding of the eugeosynclinal volcanics of northern Ellesmere Island produced land areas from which sands were swept southward to form Upper Devonian non-marine sandstones in the miogeosynclinal basins. The total assemblage of sediments is more than 35,000 feet thick in some districts. The dominant folding of the Franklinian geosyncline, called the Ellesmerian orogeny, occurred near the close of Upper Devonian time. With the exception of the Cornwallis fold belt discussed below, the resulting folds of the Innuitian Region trend southwesterly from northern Ellesmere Island and swing westerly through the Parry Islands. The Cornwallis fold belt interrupts this trend at right angles because it lies along a buried north-trending prong of Precambrian rocks, which extend from exposures of the Boothia Peninsula. This elongate Precambrian basement rose periodically at least six times to produce north-trending faults and folds in the overlying Palæozoic beds of the Cornwallis fold belt, whereas the Franklinian geosyncline was deformed by somewhat younger and more widespread compressional crustal forces.

Following the Ellesmerian orogeny, a vast area including the present Sverdrup Islands and much of western Ellesmere Island was depressed to form the site of deposition of a composite thickness of 60,000 feet of Pennsylvanian to Tertiary volcanics, shales, sandstones, some gypsum and, in the upper part, a thick assemblage of non-marine clastic sediments. The rocks of this Sverdrup Basin were deformed about the end of the Mesozoic Era by the Laramide orogeny. Late Palæozoic gypsum beds, which tend to flow under high pressure, were forced upward to intrude overlying Mesozoic beds. Gypsum diapiric domes later penetrated Tertiary beds. No salt or potash-bearing minerals are as yet known to be associated with the gypsum, although a few minor occurrences of native sulphur have been found. A zinc-lead deposit being evaluated in limestone or dolomite on Little Cornwallis Island is unique in Canada, because much of the zinc occurs as the carbonate smithsonite, rather than sphalerite, the usual sulphide. Coal is widely distributed in the Innuitian Region, particularly in Upper Devonian beds of the Franklin miogeosyncline and in three formations within the Sverdrup Basin. As in the case of the

Arctic Lowlands and Plateaux, geological conditions are favourable for commercial petroleum accumulation but serious exploration guided by known regional geology has only recently begun in this vast area. Lead and zinc deposits in dolomitic, reefoid limestones might be expected on geological grounds. Regions in which reefoid dolomites lie near boundaries of calcareous rocks where they change to dark shales of the same age might be most favourable, according to some genetic hypotheses. Massive, pyritic base-metal sulphide deposits would probably be most likely to lie within volcanics in the northern, eugeosynclinal belt of the Franklinian geosyncline.

**Arctic Lowlands and Plateaux.**—These geological and physiographic divisions lie in large basins separated by arches and belts of exposed Precambrian crystalline rocks. Gently inclined or flat sediments underlying the basins tend to be thin sandstones and limestones near the basal contact with metamorphosed Precambrian rocks but limestones and dolomites of Middle Ordovician to Early Devonian age are the principal rock types and at some localities are estimated to be up to 18,000 feet thick. Shales, sandstones and restricted areas of conglomerates of Middle Devonian to Late Devonian age are normally the youngest rocks preserved.

Reefoid, vuggy dolomites of Middle Ordovician to Middle Silurian age commonly contain bituminous residues in surface exposures, structural and stratigraphic traps are probably present, and thick sections of potential source beds of petroleum and gas are known. Active oil seepages have not been reported. Petroleum exploration, aided by prior geological knowledge and published maps, began during the mid-1950s.

Beds of gypsum admixed with some shale up to 970 feet thick are exposed in many localities in Middle Ordovician beds. If more soluble evaporite minerals such as rock salt and potash-bearing minerals had been formed with gypsum, they would be leached from surface outcrops, but could be disclosed in future drilling. Piercement domes of gypsum, locally with occurrences of native sulphur, are found in the Sverdrup Basin. Coal is rare here, although abundant in the Innuitian Region.

**Arctic Coastal Plain.**—This plain comprises late Tertiary or Pleistocene sand and gravels, which dip gently seaward along the northern exposed border of the Innuitian Region. The very young beds cover the extensions of eroded fold belts and the Sverdrup Basin. Although of minor land extent, they or their equivalents probably extend far out on the Arctic continental shelf.

**The Interior Plains.**—The Interior Plains are underlain by undisturbed or gently flexed or tilted sedimentary strata, which overlap the western border of the Canadian Shield and merge with the eastern foothills of the Cordilleran region. The Shield slopes at a rate of 15 feet per mile under the Great Plains, in the western part of which the overlying strata reach a thickness of 10,000 feet. The older overlying beds have been bevelled by erosion along the border of the Shield, exposing in central Manitoba marine beds of limestone, sandstone and shale of Ordovician, Silurian and Devonian ages. Farther north the exposed Palæozoic strata are mainly Devonian. The Palæozoic formations are overlain by early Mesozoic strata of marine origin and these by both marine and freshwater Cretaceous formations, which are the uppermost strata in much of Saskatchewan and Alberta. In places, however, as at Turtle Mountain in Manitoba and the Cypress Hills in Saskatchewan, these are overlain by remnants of early Tertiary formations.

The rich soils of the Great Plains, particularly in the Manitoba Plain, were derived from the weathering of the underlying strata and the unconsolidated deposits resulting from glaciation. Most of Canada's oil and gas is produced from Palæozoic and Mesozoic strata underlying the Great Plains, mainly in Alberta but also in Saskatchewan, Manitoba and northeastern British Columbia. The productive beds range from Devonian to Cretaceous in age, the reservoir rocks being largely reefs containing openings, although "stratigraphic" traps such as lenses of porous sediments overlain by non-porous ones are also important. Exploration for oil and gas has recently been extended through most of



the plains including those in the Arctic Archipelago. The Athabasca oil sands, extending for more than 100 miles along the Athabasca River in northern Alberta, are accumulations of heavy oil and sand of Early Cretaceous age. The total amount of oil in these sands is estimated at 100,000,000 to 300,000,000,000 barrels, more than all other known reserves of the world. Present and potential production of potash in southern Saskatchewan represents a major source in terms of world supply. These Middle Devonian evaporites are estimated to contain more than 100,000,000,000 tons of potash. Coal is being or has been produced from many places in the Great Plains, which also yield salt, gypsum, limestone and other non-metalliferous products. Important deposits of zinc and lead are being mined in Devonian limestone at Pine Point, Great Slave Lake.

**St. Lawrence and Hudson Bay Lowlands.**—The St. Lawrence Lowlands are underlain by marine beds deposited during much of Palæozoic time. Rather similar late Ordovician to Devonian beds are exposed in the Hudson Bay Lowlands. Small areas of Palæozoic beds are preserved at various localities on the Canadian Shield between these two Lowlands and suggest that arms or shallow straits of Palæozoic seas may have connected the present Hudson Bay and the St. Lawrence Lowland areas. The St. Lawrence Lowlands from Quebec City to Windsor are occupied by about one half the population of Canada, supported by much arable land and major industrial concentrations. These Lowlands are divided by an exposed southeasterly-trending prong of the Canadian Shield called the Frontenac Axis, which extends into the United States northeast of Lake Ontario. Southwest of the Frontenac Axis, marine sedimentary rocks of Cambrian to Mississippian age rest on buried Precambrian rocks. Known formations there have an aggregate thickness of almost 6,000 feet. Rocks are mainly limestones, shales and sandstones deposited in generally shallow seas. During Silurian time, evaporation exceeded saltwater inflow in some areas and the salt and gypsum beds within the Salina Formation were deposited. In part because of their position near industrial centres, roughly 80 p.c. of the salt produced in Canada is recovered by evaporation of brines and from two mines adjacent to the southeastern shore of Lake Huron. Gypsum is also mined from the Salina Formation. Petroleum has been produced continuously since 1859, mainly from Devonian beds, and natural gas has been produced since 1889, mainly from Silurian beds. Fluorite was at one time produced in moderate tonnages from veins in Ordovician limestone near Madoc in Ontario.

Northeast from the Frontenac Axis to Quebec City, only lower Palæozoic beds are present. Cambrian sandstone and thick beds of Ordovician limestone and shale attain thicknesses of up to 10,000 feet. Showings of petroleum and natural gas are known in some of the 185 exploratory wells drilled but no production has been attained. Sandstones of high silica content are quarried near Montreal, Quebec. Because of the population and industrial concentration in both the above sections of the St. Lawrence Lowlands, large amounts of limestone, shale and sandstone are quarried for structural materials, cement production and chemical needs. Such products have a low unit value and can be profitably extracted only within low-cost reach of their consumption points.

Anticosti Island is an isolated, northeastern division of the St. Lawrence Lowlands. Exploratory drilling for petroleum shows a thickness of up to 6,146 feet of Silurian and older Palæozoic sediments underlying the island, with Precambrian crystalline rocks at greater depths. Showings of oil and gas in one of five holes were not considered of commercial value.

The Hudson Bay Lowlands are underlain by flat-lying Ordovician to Devonian beds and Upper Cretaceous lignite, sand and fire clay. The beds attain a variable thickness of at least 1,536 feet in southern James Bay. Post-Precambrian beds near the centre of Hudson Bay are indicated by a seismic survey made by the Geological Survey of Canada to be up to 5,905 feet thick. Deposits of gypsum and lignite are known but not exploited.



### Surficial Deposits

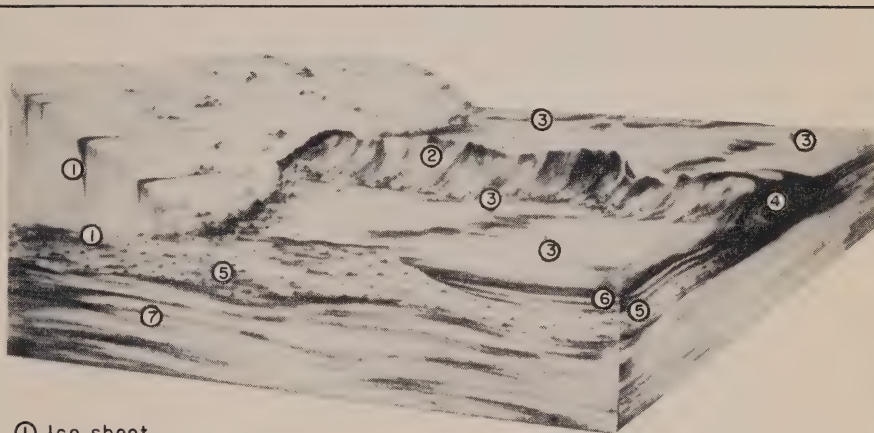
The continental glaciation of most of Canada has removed weathered bedrock and residual soils and has almost certainly removed some types of ores such as pre-Pleistocene placer gold deposits, laterites, and upper portions of metallic and manganiferous ore deposits, which had formerly been enriched under stable near-surface conditions. Material deposited includes dominantly clastic detritus such as tills, esker gravels, outwash gravels and sands, or rock flour deposited in lakes or shallow seas in the form of multiple layers of varved clay or massive clay beds. Maps showing the surface distribution of these materials are published by federal agencies and reflect some physiographic features and present and potential land use.

Much of Canada's bedrock surface and ore deposits are covered by such glacially derived surficial deposits. Gravel, sands and clays are extensively used in industrial regions and for earth dam construction, and coarse materials are used for road-building. Other beds or ancient river channels comprising gravels and coarse sands constitute important sources of groundwater. The nature and mechanical properties of glacial deposits must be well known for foundation design of large buildings, for dam design and for other engineering projects. Orebodies now covered by glacial material contributed blocks or grains of ore to the detritus during glaciation. Such blocks or heavy mineral grains can be found and in some cases traced back to their point of origin if the direction(s) of glacial transport can be deduced and if the history of transport is not too complex. Groundwaters circulating through ore and overlying surficial material may transfer metals in solution and enrich the nearby surface soil or stream sediments. Because so much of Canada's bedrock area is screened by surficial deposits, geochemical surveys to detect surface geochemical anomalies have been the initial clue to the discovery of some of its ore deposits. Other anomalies are known to be derived from non-economic mineralization or, where the path followed by groundwater from ore to surface is complex, the source of some surface anomalies remains unknown. Federal and some provincial geologists conduct regional geochemical surveys and supporting research, and mineral exploration companies make extensive and more detailed use of the geochemical prospecting methods.

### Geophysics in Canada

Canadian scientists have played a major role in the development and application of airborne and ground geophysical instruments and techniques to probe below the surface of the land, the lakes and continental shelves. Regional surveys of variations in the earth's magnetic field are conducted with the use of aircraft by federal and joint federal-provincial agencies and results are published as aeromagnetic maps. Federal scientists have probed the Palaeozoic beds and the surface of their buried basement in Hudson Bay and parts of the continental shelf by seismic methods; they make accurate measurements of the force of gravity at a network of Canadian stations, and record earth tremors and calculate their points of origin. Oil companies commonly conduct seismic and geological studies over large areas as the principal means of selecting promising drill sites. Mineral exploration companies normally select a district which they consider geologically favourable, carry out combined airborne electromagnetic and magnetometer surveys and then survey anomalous localities on the ground with more detailed electromagnetic, magnetic and/or gravity surveys. After geological examination and geochemical studies, these combined data allow selection of initial drill sites where drilling still seems warranted.

Aeromagnetic surveys measure variations in the earth's magnetic field caused by near-surface differences in the magnetic properties of bedrock and to a lesser extent by deeper bedrock features. These surveys have been vigorously conducted and have yielded



① Ice-sheet

② Esker

⑤ Basal till

③ Glacial lake

⑥ Varved clay

④ Esker gravel

⑦ Bedrock

STRATUM DEPOSITED  
DURING MELTING OF AN  
ICE-SHEET

GSC





aeromagnetic maps of 38 p.c. of Canada's land surface as well as parts of the continental shelves off Nova Scotia and Hudson Bay and other Arctic waters. On regional scales, these maps materially aid in preparing geological maps, particularly in areas of extensive surficial cover, and aid mineral exploration by indicating the trends of rock units selected as being potentially favourable. One of the earliest of the aeromagnetic surveys in 1949 by the Geological Survey of Canada clearly pin-pointed and led to the discovery by an exploration company of the present Marmoraton iron mine, although the ore was completely covered by about 125 feet of flat-lying limestone. The compilation and reduction in scale of many individual aeromagnetic maps, as in the accompanying illustration, shows major structural trends in the Canadian Shield over an area of 71,000 square miles. The heavy northeast-trending line marks the boundary between the Superior province on the southeast and the Churchill province on the northwest. Northeast of the dotted line on the map, the Precambrian rocks are completely covered by flat-lying limestones of the Hudson Bay Lowlands, yet the structural trends in the basement rocks were readily detected.

Regional sea-seismic and aeromagnetic surveys of parts of the Atlantic and Arctic continental shelves are completed and in progress in order to evaluate the deeply buried sequences and structures below these relatively shallow waters and to prepare for more detailed company exploration for off-shore oil and gas.

Electromagnetic methods are principally used by exploration companies to detect buried bodies of anomalous electrical conductivity with respect to normal bedrock. Most conductors so detected prove to be caused by graphitic or barren pyritic zones and are of no commercial value, but a small proportion prove to be orebodies such as a single remarkable discovery, announced in 1964, near Timmins in Ontario.\* Prior to drilling, it is commonly not possible to distinguish details of the conductor. Current research in the Geological Survey of Canada is in part directed toward the use of magnetotelluric currents in the detection of buried sulphide deposits but more effort is expended in applying electromagnetic methods to the study of the stratigraphy and nature of unconsolidated sands, gravels, clay and till. These studies, combined with shallow seismic surveys, have been particularly rewarding in defining buried river channels that contain abundant groundwater.

Seismic surveys to depths of about 180 feet are readily made by sending shock waves into the ground from a sledge-hammer blow and recording their reflections. The detection of groundwater reserves, or surficial aquifers, both in surficial material and bedrock, is one application of the method, as discussed above; or depths to bedrock for heavy construction or mineral exploration problems may be determined at relatively low cost. Penetration deep below the surface is effected by detonating explosive charges on land or sea, and recording the reflections of waves from deeply buried, folded or flat-lying strata, or detection of variations, such as oil-bearing reefs, within strata. The Geological Survey of Canada recently defined the thickness of potential oil-bearing strata beneath the waters of Hudson Bay by this method.

Research continues in other new methods of rapidly detecting potentially useful physical variations at and near the earth's surface. Airborne infra-red imagery, for example, discloses slight variations in apparent surface temperature. Several applications are being investigated such as detection of cold groundwaters or hot springs discharging into lakes or rivers, detection of discharge points of warm industrial waste waters, or possibly slightly warmer land surfaces which might be related to sources of geothermal power or some types of ore deposits. The geiger counter and scintillometer continue to

\* This deposit was found by astute geological selection of a large area followed by airborne and ground geophysical surveys and, finally, drilling. No significant massive sulphide deposits of this type had formerly been known in this long-established gold-mining district.

greatly aid prospecting for uranium. More sophisticated gamma ray spectrometers are now being developed to give quantitative field determinations of the uranium, thorium and potassium content of rocks.

The foregoing are only brief sketches of the subjects covered. Further condensed information is supplied by *Geology and Economic Minerals of Canada* (including Map 1045A) and *Prospecting in Canada*; the latter also contains chapters on the principles of geology and on minerals and rocks. *The Geological Map of Canada* (1045A, 50 cents) and *Canada, Principal Mining Area* (900A) are also recommended. Map 900A is revised annually; one copy is sent free to residents of Canada and additional copies are 25 cents each. These publications can be ordered from the Director, Geological Survey of Canada, Ottawa, together with lists of reports and maps of the Geological Survey of Canada on specific topics and areas, for each province. Other publications are available from provincial mines departments.

### Section 3.—Federal Government Surveying and Mapping\*

The needs for maps and surveys of Canada are met mainly by the Department of Energy, Mines and Resources. Although not all Branches of this Department make surveys and compile maps, many of them are involved in such work either wholly or partly. They compile topographical, geological and aeromagnetic maps, aeronautical and hydrographic charts, as well as specialized maps showing electoral district boundaries, land use and other features. In carrying out these tasks, the Department is guided partly by long-range plans based on general national needs and partly by requests from private enterprise and other government agencies. Some types of maps and surveys are also produced by provincial and private agencies and, to avoid duplication, the Department co-ordinates its work with these bodies. Other types—such as hydrographic and aeronautical charts—are produced exclusively by the Department.

The staff of the Department numbers about 4,000, of whom 1,000 are scientists and engineers and 1,300 are technicians. Each year, some 1,500 men are sent into the field to make surveys and to carry out research. Of the various Branches and Divisions, the following are particularly concerned with surveying and mapping: Surveys and Mapping Branch (geodetic and topographic surveys, electoral maps, aeronautical charts); Marine Sciences Branch (hydrographic charts of seacoasts and inland navigable waters); Geological Survey of Canada (geological features); Observatories Branch (geophysical maps); and Geographical Branch (land-use, land-form and other special maps).

**Types of Surveys.**—In the field of geodesy, the Geodetic Survey maintains and extends a network of horizontal and vertical control points across Canada. At present, most of the extension work is in the northern parts of the country, while in the south greater density and the closing of gaps are the main tasks. The ultimate aim is to have horizontal and vertical control points no farther apart than 20 miles. The Topographical Survey is proceeding with the establishment of control points at smaller intervals and the mapping of the country at the most popular scales—1:25,000, 1:50,000 and 1:250,000. Complete coverage of Canada at 1:250,000, or about four miles to the inch, is expected by 1967; of the 925 maps required for this purpose, more than 800 were completed by early 1966. Of particular interest in both geodetic and topographical surveying is the establishment of monumented control points in and around municipalities, a long-neglected and urgently needed task.

The Department also carries out legal or property surveys on Crown lands, such as the two northern Territories, the National Parks and Indian reserves; it participates in the

\* Prepared by H. G. Classen, Special Projects Section, Editorial and Information Division, Department of Energy, Mines and Resources, Ottawa.

survey and demarcation of interprovincial and territorial boundaries; is responsible for the preparation of descriptions and diagrams of federal electoral districts; and is the sole agency in Canada for the preparation of aeronautical charts showing airports, airways, and radio and other aids necessary for air navigation. Much of the work in the latter type of mapping arises from the need to keep up with the flow of new aeronautical information and to present it in a form that may be easily interpreted by the pilot. As a service to map-makers and others interested in that field, the Department maintains the National Air Photo Library, a collection of all air photographs taken by or for the Federal Government.

Hydrographic and oceanographic surveys are carried out from the Department's fleet of ships and launches in the seas bordering Canada and in inland lakes and rivers. The Bedford Institute of Oceanography at Dartmouth, N.S., is the base for operations on the Atlantic Coast and in the Eastern Arctic, and the Pacific base is at Victoria, B.C. The final compilation of the marine charts is done at Ottawa.

Geological surveys are carried out mainly to provide an inventory of the potential mineral resources of Canada, to aid in the discovery of mineral deposits, and to help in other aspects of the national economy influenced by geological factors. Each year approximately 100 parties are placed in the field, about half of whom are engaged in reconnaissance mapping. The first systematic reconnaissance of the geology of Canada is approaching completion and attention is being increasingly given to more fundamental research. Both the Geological Survey and the Observatories Branch carry out geophysical surveys, resulting in maps showing such features as variations in terrestrial magnetism, gravity and seismicity. The geophysicists of the Geological Survey are interested mainly in outlining geological features and those of the Observatories aim at a better over-all knowledge of the earth. A network of 22 first-order seismic stations is maintained across Canada and earthquake-probability maps are published.

The Geographical Branch produces special maps showing actual land use—an important aid in economic planning; it surveys and maps land forms in the Arctic, where ice formation produces surface dislocations found in few other areas; and also acts as the executive arm of the Canadian Permanent Committee on Geographical Names.

In the drafting and printing of the maps, highly advanced techniques for the automatic transfer of terrain features from air photos to drafting sheets and precise lithographing have been combined to assure speedy processing of field data and the production of colourful, easily understood and relatively inexpensive maps for every type of user, from vacationer to town planner and from prospector to pilot. The Department operates a large modern plant to print the maps compiled by its several Branches as well as maps compiled by other government departments and agencies. The Surveys and Mapping Branch has a stock of almost 12,000,000 maps from which it distributes more than 1,000,000 annually. Each year the Geological Survey distributes about 350,000 maps and reports, the Marine Sciences Branch distributes about 250,000 charts, and other Branches distribute large numbers of their own maps and charts.

## PART II.—PUBLIC LANDS, WILDLIFE AND FLORA\*

### Section 1.—Federal and Provincial Public Lands

In Table 1 classifying the area of Canada by tenure, items 2, 3, 4 and 5 are obtained from Federal Government sources and items 1, 6, 7 and 8 from provincial government sources.

\* No information on the flora of Canada is given in this publication but the reader is referred to a detailed special article on the subject, prepared by Dr. Homer J. Scoggan of the National Museum of Canada, which appears in the 1966 Year Book at pp. 35-61.



## 1.—Total Area classified by Tenure (circa) 1965

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles
1. Privately owned land or land in process of alienation from the Crown.....	6,803	2,054	16,107	15,510	43,500	45,659
2. Federal lands other than leased lands, National Parks, Indian reserves and forest experiment stations.....	163	70	132	601	416 <sup>1</sup>	1,113
3. National Parks.....	153	7	517	79	2	12
4. Indian reserves.....	—	4	40	59	294	2,406
5. Federal forest experiment stations.....	—	—	—	35	7	41
6. Provincial lands other than Provincial Parks and provincial forest reserves.....	148,871	42	4,618	10,659	491,084	357,498 <sup>3</sup>
7. Provincial Parks.....	78	1	11	4	53,081	5,853
8. Provincial forest reserves.....	117	6	—	1,407	6,478	<sup>3</sup>
<b>Totals</b> .....	<b>156,185</b>	<b>2,184</b>	<b>21,425</b>	<b>28,354</b>	<b>594,860</b>	<b>412,582</b>
	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles
1. Privately owned land or land in process of alienation from the Crown.....	53,318	104,887	98,149	19,991	85	406,063
2. Federal lands other than leased lands, National Parks, Indian reserves and forest experiment stations.....	1,113	4,972	2,842	502	1,508,246 <sup>4</sup>	1,520,170
3. National Parks.....	1,148	1,496	20,717 <sup>5</sup>	1,671	3,625 <sup>4</sup>	29,425
4. Indian reserves.....	816	1,913	2,541	1,282	11	9,366
5. Federal forest experiment stations.....	25 <sup>7</sup>	—	23	—	12	143
6. Provincial lands other than Provincial Parks and provincial forest reserves.....	188,281	16,681	119,427	285,791	—	1,622,952
7. Provincial Parks.....	2,854 <sup>8</sup>	1,803	2,319	10,018	—	76,022
8. Provincial forest reserves.....	5,415 <sup>8</sup>	119,948	9,267	47,000	—	189,638
<b>Totals</b> .....	<b>251,000<sup>9</sup></b>	<b>251,700</b>	<b>255,285</b>	<b>366,255</b>	<b>1,511,979</b>	<b>3,851,809<sup>9</sup></b>

<sup>1</sup> Includes Gatineau Park (97 sq. miles) and Quebec Battlefields Park (0.36 sq. mile) which are under federal jurisdiction but are not technically National Parks. <sup>2</sup> Less than one square mile. <sup>3</sup> Sect. 46 of the Crown Timber Act which authorized Provincial Forest Reserves was repealed Mar. 25, 1964; all such lands are included in item 6. <sup>4</sup> Includes 952,849 sq. miles set aside by Order in Council as native game preserves in which only Indians and Eskimos may hunt, but which are not regarded as National Parks. <sup>5</sup> Includes that part of Wood Buffalo Park in Alberta (13,675 sq. miles); this park, although established under the National Parks Act, is administered by the Department of Indian Affairs and Northern Development. <sup>6</sup> That part of Wood Buffalo Park in N.W.T. <sup>7</sup> This forest experiment area of 25 sq. miles is also included in National Parks figure. <sup>8</sup> Includes 1,945 sq. miles of provincial park land within provincial forest reserves. <sup>9</sup> Does not add because of duplications; see footnotes concerned.

**Federal Public Lands.**—Public lands under the administration of the Federal Government comprise lands in the Northwest Territories including the Arctic Archipelago and the islands in Hudson Strait, Hudson Bay and James Bay, lands in Yukon Territory, ordnance and admiralty lands, National Parks and National Historic Parks and Sites, forest experiment stations, experimental farms, Indian reserves and, in general, all public lands held by the several departments of the Federal Government for various purposes connected with federal administration (see Table 1). These lands are administered under

the Territorial Lands Act (RSC 1952, c. 263) and the Public Lands Grants Act (RSC 1952, c. 224) which became effective June 1, 1950 and replaced previous legislation.

The largest areas under federal jurisdiction are in the Northwest Territories and Yukon Territory where only 85 sq. miles of a total area of 1,511,979 sq. miles are privately owned. This part of the national domain, with the exception of the islands in Hudson Bay and James Bay, is all north of the 60th parallel of latitude and occupies about 40 p.c. of the surface of Canada. It is under the administration of the Department of Indian Affairs and Northern Development.

**Provincial Public Lands.**—Public lands of Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia (except the Railway Belt and Peace River Block) have been administered since Confederation by the provincial governments. In 1930 the Federal Government transferred the unalienated portions of the natural resources of Manitoba, Saskatchewan and Alberta and of sections of British Columbia to the respective governments, and all unalienated lands in the Province of Newfoundland, except those administered by the Federal Government, became provincial public lands under the Terms of Union on Mar. 31, 1949. All land in the Province of Prince Edward Island has been alienated except 130 sq. miles under federal or provincial administration.

Information regarding provincial public lands may be obtained from the respective provinces. (See the Directory of Sources of Official Information, Chapter XXVII, under "Lands and Land Settlement".)

### Subsection 1.—National Parks

Canada's National Parks are the result of the Federal Government's efforts to preserve natural areas of outstanding scenic and biological interest for the benefit of the public. The national park concept, which began with the establishment of Yellowstone National Park in the United States in 1872, was soon afterwards applied in Canada. In 1885, the Canadian Government reserved from private ownership the hot mineral springs of Sulphur Mountain in what is now Banff National Park. Two years later, this 10-sq. mile reserve was extended to 200 sq. miles and named Rocky Mountain Park, the first federal park in Canada. In the same year, Queen Victoria Niagara Falls Park, the first provincial park, was established by the Ontario Government to protect the public's right to view the great natural wonder of Niagara Falls. Two land reserves in southern British Columbia—Yoho and Glacier—were established by the Federal Government in 1886, a reserve in the Waterton Lakes area of southern Alberta in 1895, and an area of 4,200 sq. miles around Jasper, Alberta, in 1907. These four reserves, all in the western mountain ranges, joined Banff as the nucleus of the National Park system when the Dominion Forest Reserves and Parks Act was passed by Parliament in 1911. The Act also provided for a distinct National Parks Branch in the Federal Government to protect, administer and develop the parks.

By 1935, nine more National Parks had been established. Three of these were in Ontario and consisted of federally owned Crown land; one in Saskatchewan and one in Manitoba were former forest reserves; Wood Buffalo National Park, straddling the Alberta-Northwest Territories border and occupying an area of 17,300 sq. miles, making it the largest national park in the world, was established as a refuge for the largest surviving herd of buffalo in North America; Elk Island National Park near Edmonton was also established as a preserve for buffalo; and Mount Revelstoke and Kootenay National Parks, scenic areas in southern British Columbia, were established by agreement between the Federal and British Columbia Governments.

The parks added to the system since 1935 were set up with the co-operation of provincial governments which made lands available for National Park purposes. All lands suitable for National Parks are now under the administration of provincial and territorial

governments and a new National Park may be established by Act of Parliament only after the land for it has been acquired by the provincial government and transferred, together with all its mineral and other resource rights, to the administration of the Federal Government.

National Parks are now under the jurisdiction of the Minister of Indian Affairs and Northern Development and the Natural and Historic Resources Branch and are administered under the National Parks Act enacted in 1930 (RSC 1952, c. 189) and various park regulations. The purpose of the parks and the objectives of their management are set out in that Act, which dedicates the parks to the people of Canada for their "benefit, education and enjoyment" and instructs that they are to be maintained and used so as to leave them unimpaired for the enjoyment of future generations.

An important step in the evolution of National Park administration was taken when all policies regarding the parks were reviewed and consolidated in a statement that was approved by the Government and announced in the House of Commons on Sept. 18, 1964. The main points of this policy statement, which will guide administration and provide objectives for planning and development, are:—

- (1) National Parks are established to preserve for all time the most outstanding and unique natural features of Canada for the benefit, education and enjoyment of Canadians as part of their natural heritage. They are dedicated forever to one use—to serve as sanctuaries of nature for rest, relaxation and enjoyment. No exploitation of resources for any other purpose is permitted. All development must contribute to public enjoyment and conservation of the parks in a natural condition.
- (2) Zoning will be used to guide development and to preserve park values. Visitor services will be grouped generally to visitor service centres, a definition that applies to existing townsites.
- (3) National Parks cannot meet every recreational need; the most appropriate uses are those involving enjoyment of nature and activities and experiences related to the natural scene.
- (4) The Federal Government assumes the cost of administration and protection in the parks and provides basic facilities for public use, such as roads, trails, campgrounds, picnic areas, nature interpretation and utilities. Other facilities beyond basic requirements, such as hotels, motels, restaurants, gas stations, stores and other special services, are provided by private enterprise.
- (5) Park residents and businesses should be in the same economic position as those operating outside the National Parks and this principle governs the approach to charges, rentals and fees. The users of special services such as swimming pools, marinas, golf courses and fully serviced campgrounds should pay the operation and maintenance costs of these publicly operated facilities. In general, permanent and seasonal residents should be limited to persons providing basic services to park visitors and to the park community.
- (6) All decisions affecting public development and the activities of private enterprise must be governed by the national interest as expressed by the National Parks Act.

In addition to the National Parks, which preserve natural features, National Historic Parks and Sites preserve and identify the places important in the history of Canada. The National Historic Parks are military or fur-trading forts that have been preserved, or historic buildings or reconstructions of historic buildings and most of them have museums associated with them. Hundreds of monuments or plaques commemorating personages or events have been erected across the country. A site is declared of national historical significance on the recommendation of the Historic Sites and Monuments Board of Canada, an advisory board of historians representing all provinces.

The National Parks and National Historic Parks and Sites are administered by a director and three regional directors who are responsible for operations in the Western Region, the Central Region (Ontario and Quebec) and the Atlantic Region. Each director is advised by representatives of the five staff divisions of the Branch—Financial and Management, National Parks Service, Canadian Historic Sites, Engineering and Architectural, and Planning. A resident superintendent manages each park and directs a staff of park wardens who protect the park and its natural features and enforce park regulations, park naturalists who explain the park to visitors and offer various educational services, and other administrative, maintenance and visitor service personnel.



Each park is being developed to yield the recreational potential for which it is suited and sightseeing, camping, fishing, photography, hiking and nature study are the most popular recreations common to the 18 parks that are accessible to the public. There are campgrounds in each park; a daily charge is made for the use of those equipped with complete services but there is no charge for the use of other campgrounds. A vehicle admission fee, varying from 25 cents for a single entry to \$2 for an annual licence good for all parks, is payable on entering all parks in Western Canada and Point Pelee National Park in Ontario; there is no charge for motor vehicles entering parks in the Atlantic Provinces.

## 2.—Location, Year Established, Area and Characteristics of National Parks and of National Historic Parks and Sites

Park	Location	Year Estab- lished	Area  sq. miles	Characteristics
<b>National Parks</b>				
Terra Nova.....	On Bonavista Bay, Newfoundland, 205 miles north of St. John's.	1957	153.0	Rocky headlands, wooded interior areas, off-shore and freshwater fishing. Serviced campground and cabin accommodation.
Prince Edward Island..	North shore of Prince Edward Island.	1937	7.0	Strip 25 miles long on shores of the Gulf of St. Lawrence. Fine bathing beaches. Hotel and cabin accommodation. Serviced campgrounds.
Cape Breton Highlands.	Northern part of Cape Breton Island, N.S.	1936	367.0	Rugged Atlantic coastline with mountainous background. Fine seascapes. Hotel and cabin accommodation. Serviced campgrounds.
Kejimikujik.....	Interior of southwestern Nova Scotia near Maitland Bridge.	<sup>1</sup>	150.0	Newest National Park still at early stage of development.
Fundy.....	On Bay of Fundy between Moncton and Saint John in New Brunswick.	1948	79.5	Interesting rock formations on coast and rolling hills inland. Motel and cabin accommodation and campgrounds.
Georgian Bay Islands..	In Georgian Bay, 3 miles by water from Honey Harbour, Ont.	1929	5.4	Camping, canoeing, hiking, swimming, fishing and boating opportunities. Unusual geological formations on Flowerpot Island, off Tobermory on Midland Peninsula. Accessible by boat only.
Point Pelee.....	On Lake Erie near Leamington, in southwestern Ontario.	1918	6.0	Most southerly part of Canadian mainland. Fine bathing beaches. Unusual flora. Resting place for migrating birds. Campground.
St. Lawrence Islands...	In St. Lawrence River between Brockville and Kingston, Ont.	1914	260.0 (acres)	Mainland area and 14 islands with docks, campgrounds and picnic areas. Representative selection of the Thousand Islands. Islands accessible by boat only.
Riding Mountain.....	Southwestern Manitoba, west of Lake Winnipeg.	1929	1,148.0	Woodland escarpment with fine lakes. Fishing, swimming, trail-riding, hiking and golfing. Visitor services in Wasagaming townsite. Campgrounds.
Prince Albert.....	Central Saskatchewan, north of Prince Albert.	1927	1,496.0	Forested region dotted with lakes and interlaced with streams. Fishing, swimming, boating and golfing. Marina. Visitor services at Waskesiu townsite.
Banff.....	Western Alberta, on east slope of Rockies, 65 miles from Calgary.	1885	2,564.0	Best known and most popular of the National Parks. Magnificent scenery. Mineral hot springs. Resort facilities at Banff and Lake Louise. Skiing developments at Mount Norquay, Mount Whitehorn, Sunshine, Skoki and Temple. On Trans-Canada Highway.

<sup>1</sup> Not yet formally established.

## 2.—Location, Year Established, Area and Characteristics of National Parks and of National Historic Parks and Sites—continued

Park	Location	Year Estab- lished	Area	Characteristics
			sq. miles	
<b>National Parks— concluded</b>				
Elk Island.....	Central Alberta, near Ed- monton.	1913	75.0	Fenced preserve containing large herd of buffalo; also deer, elk and moose. Popu- lar picnic and day-use area. Cabin accommodation and serviced camp- ground.
Jasper.....	Western Alberta, on east slope of Rockies, 235 miles from Edmonton.	1907	4,200.0	Mountainous area and noted wildlife sanc- tuary. Majestic peaks, icefields, beau- tiful lakes and famous resort, Jasper. Mineral hot springs. Connected with Banff by scenic Banff-Jasper Highway. Accessible also by rail. Hotel and cabin accommodation and campgrounds.
Waterton Lakes.....	Southern Alberta, adjoining Glacier Park in Mon- tana, U.S.A.	1895	203.0	Canadian section, Waterton-Glacier Inter- national Peace Park. Mountainous area with spectacular parks and beautiful lakes. Hotel, motel and cabin accom- modation. Serviced and unserviced campgrounds.
Glacier.....	Southeastern British Col- umbia, on summit of the Selkirk Range.	1886	521.0	Superb alpine region, towering peaks, glaciers and forests. Climbing, hiking and camping. On Trans-Canada High- way. Visitor services at Rogers Pass.
Kootenay.....	Southeastern British Col- umbia, on west slope of Rockies.	1920	543.0	Includes Vermilion-Sinclair section of Banff-Windermere Highway. Broad valleys, deep canyons, mineral hot springs. Hotel and cabin accommo- dation. Serviced and unserviced camp- grounds.
Mount Revelstoke.....	Southeastern British Col- umbia, on west slope of Selkirks.	1914	100.0	Mountain-top plateau with rolling alpine meadow and picturesque tarns.
Yoho.....	Eastern British Columbia, on west slope of Rockies.	1886	507.0	Lofty peaks, magnificent waterfalls, colour- ful lakes. Yoho and Kicking Horse Valleys. Hotel and cabin accommo- dation. Serviced and unserviced camp- grounds.
Wood Buffalo.....	Partly in Alberta, and partly in Northwest Ter- ritories, between Atha- basca and Slave Rivers.	1922	17,300.0	Largest National Park in world. Home of largest remaining herds of plains and wood bison and nesting ground of whoop- ing crane. Accommodation at and access by boat and aircraft from Fort Smith, N.W.T.
<b>National Historic Parks</b>			acres	
Signal Hill.....	St. John's, Nfld.....	1958	243.4	Site of 1762 battle between French and British and of many fortifications. Marconi made first transatlantic wireless transmission here in 1901.
Fort Amherst.....	Prince Edward Island, near Rocky Point.	<sup>1</sup>	222.0	Remaining earthworks of British fort built after 1758.
Fort Anne.....	Annapolis Royal, N.S.....	1917	31.0	Site of French fort first built about 1635, finally captured and occupied by British in 1710. Museum and well-preserved earthworks.
Fortress of Louisbourg.	Cape Breton Island, N.S., 25 miles from Sydney.	1940	13,000.0	Walled town built by French 1713-58 and demolished by British 1759. Being par- tially reconstructed. Archaeological in- vestigations in progress.

<sup>1</sup> Not yet formally established.

## 2.—Location, Year Established, Area and Characteristics of National Parks and of National Historic Parks and Sites—continued

Park	Location	Year Estab- lished	Area	Characteristics
			acres	
<b>National Historic Parks—concluded</b>				
Halifax Citadel.....	Halifax, N.S.....	1951	20.0	Fortress constructed in 1820s and in 1850s. Museum.
Port Royal.....	Port Royal, N.S., 8 miles from Annapolis Royal.	1940	20.5	Reconstruction of "Habitation"—first fort built in 1605 by Champlain and DeMonts.
Alexander Graham Bell.	Baddeck, N.S.....	<sup>1</sup>	21.0	Museum containing mechanical and docu- mentary records of research by the inventor.
Grand Pré.....	Grand Pré, N.S.....	1957	20.0	Commemorates the story of the Acadians and the New England Planters. Mu- seum.
Fort Beauséjour.....	New Brunswick, near Sackville.	1926	93.0	Site of French fort erected in mid-1700s. Museum.
Fort Chambly.....	Chambly, Que.....	1940	2.5	Fort built by English in 1709-11. Museum.
Fort Lennox.....	Île aux Noix, Que., near St. Paul.	1940	210.0	Fort built by English in 1820s.
Fort Malden.....	Amherstburg, Ont.....	1940	10.0	Site of defence post built in 1797-99. Museums.
Fort Wellington.....	Prescott, Ont.....	1940	12.0	Military garrison 1812-66.
Woodside.....	Kitchener, Ont.....	1954	12.0	Boyhood home of the Rt. Hon. William Lyon Mackenzie King, former Prime Minister of Canada.
Fort Prince of Wales...	Northern Manitoba, near Churchill.	1940	50.0	Ruins of fort built 1733-71 to secure control of Hudson Bay for England.
Lower Fort Garry.....	Manitoba, 20 miles north of Winnipeg.	1951	13.0	Stone-walled fort built by the Hudson's Bay Company between 1831 and 1839.
Fort Battleford.....	Saskatchewan, 4 miles south of North Battle- ford.	1951	36.7	North West Mounted Police post built in 1876. Museum.
Fort Langley.....	Fort Langley, B.C.....	<sup>1</sup>	11.0	Partially restored trading post founded 1827. Colony of British Columbia pro- claimed here 1858.
Fort Rodd Hill.....	Esquimalt, B.C.....	1962	44.4	Extensive 19th century stone and concrete coastal fortifications.
<b>Major National Historic Sites</b>				
George Island.....	Halifax, N.S.....	<sup>1</sup>	12.5	Preserved harbour fortifications built in 1870s.
York Redoubt.....	Halifax, N.S.....	<sup>1</sup>	187.5	Perimeter Harbour Defence 1778-1945.
Fort Gaspereau.....	Near Port Elgin, N.B.....	<sup>1</sup>	2.0	Site of 1751 French Fort.
St. Andrews Blockhouse	St. Andrews, N.B.....	1938	2.5	Built during War of 1812.
Martello Tower.....	Lancaster, N.B.....	1924	0.8	Harbour defence built during War of 1812.
Sir Wilfrid Laurier's Birthplace.....	St. Lin, Que.....	1941	0.5	Period restoration relating to early life of a famous Prime Minister.
Cartier-Brébeuf Park..	Quebec, Que.....	<sup>1</sup>	5.0	Park, possible wintering site of Jacques Cartier, 1535-36.

<sup>1</sup> Not yet formally established.



## 2.—Location, Year Established, Area and Characteristics of National Parks and of National Historic Parks and Sites—concluded

Park	Location	Year Established	Area	Characteristics
			acres	
<b>Major National Historic Sites—concluded</b>				
Old walls around City of Quebec.....	Quebec, Que.....	..	...	Former Quebec City fortifications.
Fort Coteau.....	Coteau du Lac, Que.....	1	9.5	Site of fort built in 1779.
Bellevue.....	Kingston, Ont.....	1964	1.2	House lived in by Sir John A. Macdonald about 1848.
Fort St. Joseph.....	St. Joseph's Island near Sault Ste. Marie, Ont.	1	47.0	Most westerly British fort, built in 1796.
Batoche Rectory.....	Near Duck Lake, Sask...	1954	7.0	On field of final battle of Northwest Rebellion, 1885. Only surviving building of that date.
Fish Creek Memorial Park.....	Near Rosthern, Sask.....	..	39.0	Commemorates Northwest Rebellion battle of 1885.
Palace Grand Theatre.	Dawson, Y.T.....	1959	--	Reconstruction of theatre of Gold Rush days.
S.S. Keno.....	Dawson, Y.T.....	1959	--	Preserved Yukon river-boat.
Yukon Sternwheeler...	Whitehorse, Y.T.....	1959	--	Yukon river-boat of 1930 period.

<sup>1</sup> Not yet formally established.

Evidence of the increasing attraction of Canada's National Parks and National Historic Parks and Sites is the growing numbers of visitors as shown in Table 3.

## 3.—Visitors to National Parks and National Historic Parks and Sites, Years Ended Mar. 31, 1963-66

Park	1963	1964	1965	1966
	No.	No.	No.	No.
<b>National Parks</b>				
Terra Nova.....	29,915	55,926	66,180	108,738
Prince Edward Island.....	1,009,021	1,019,104	1,112,536	967,372
Cape Breton Highlands.....	451,911	615,133	624,942	729,443
Fundy.....	302,340	494,157	566,443	679,406
Georgian Bay Islands.....	19,126	18,052	8,371	8,361
Point Pelee.....	667,554	780,795	661,166	697,328
St. Lawrence Islands.....	75,239	77,368	67,109	60,330
Riding Mountain.....	654,251	693,316	681,313	687,959
Prince Albert.....	137,484	137,494	140,521	152,256
Banff.....	1,374,576	1,650,257	1,605,784	1,803,490
Elk Island.....	176,040	207,914	175,105	197,728
Jasper.....	392,987	468,579	480,102	522,658
Waterton Lakes.....	444,752	441,803	371,258	393,426
Glacier.....	345,961	752,512	705,150	767,206
Kootenay.....	541,485	557,291	548,515	638,812
Mount Revelstoke.....	428,572	768,417	703,015	741,457
Yoho.....	375,189	678,739	658,518	689,313
Wood Buffalo.....	..	..	..	..
<b>Totals, National Parks.....</b>	<b>7,426,403</b>	<b>9,426,857</b>	<b>9,179,028</b>	<b>9,845,283</b>

### 3.—Visitors to National Parks and National Historic Parks and Sites, Years Ended Mar. 31, 1963-66—concluded

Park	1963	1964	1965	1966
	No.	No.	No.	No.
<b>National Historic Parks and Sites<sup>1</sup></b>				
Signal Hill.....	238,538	195,208	241,242	275,209
Fort Amherst.....	1,764	3,851	9,513	22,576
Fort Anne.....	83,103	77,201	64,551	66,534
Fortress of Louisbourg.....	32,347	40,153	113,148	148,072
Halifax Citadel.....	243,609	192,286	213,212	213,878
Port Royal Habitation.....	31,579	35,947	39,265	42,699
Alexander Graham Bell.....	79,659	91,392	106,228	110,158
Grand Pré.....	47,871	63,395	64,194	62,848
Fort Beauséjour.....	51,454	43,346	49,427	49,087
Martello Tower.....	..	..	38,893	40,993
Fort Chambly.....	71,053	85,569	91,493	101,286
Fort Lennox.....	24,959	27,943	20,423	26,191
Sir Wilfrid Laurier's Birthplace.....	8,186	7,592	7,190	7,562
Fort Malden.....	42,254	41,023	38,916	52,670
Fort Wellington.....	46,666	51,530	52,167	40,917
Woodside.....	10,738	12,564	11,699	13,554
Fort Prince of Wales.....	362	256	424	311
Lower Fort Garry.....	59,544	85,391	86,620	92,208
Fort Battleford.....	30,895	34,807	38,825	42,878
Batoche Rectory.....	15,350	7,069	7,855	8,869
Fort Langley.....	98,560	105,139	116,723	111,941
Fort Rodd Hill.....	42,533	39,759	32,922	36,614
Palace Grand Theatre.....	..	..	..	5,525
S.S. Keno.....	..	..	..	6,857
<b>Totals, National Historic Parks and Sites.....</b>	<b>1,261,024</b>	<b>1,241,421</b>	<b>1,444,930</b>	<b>1,579,437</b>
<b>Grand Totals.....</b>	<b>8,687,427</b>	<b>10,668,278</b>	<b>10,623,958</b>	<b>11,424,720</b>

<sup>1</sup> Sites for which visitor data are available.

### Subsection 2.—Provincial Parks

Most of the provincial governments of Canada have established parks within their boundaries. Some of these, particularly in Quebec and Ontario, are wilderness areas set aside in order that some portions of the country might be retained in their natural state without change brought about by the hand of man. Most of them, however, are smaller areas of exceptional scenic or other interest which are easily accessible and are equipped or slated for future development as recreational parks with camping and picnic facilities. The more important parks in each province are mentioned briefly in the following paragraphs.

**Newfoundland.**—There are 78.5 sq. miles of provincial parkland reservations in Newfoundland. Of the total area, 26 sq. miles are at present utilized for public recreation and the remaining 52.5 sq. miles are as yet undeveloped. The active parkland consists of three regional parks, each having an area of about 8 sq. miles, and 18 roadside parks with camping and picnicking facilities, each having an area of about 100 acres.

In early 1966 arrangements were made under the federal Agricultural and Rural Development Act (ARDA) program to establish 12 more provincial parks in Newfoundland within the next two years. The parks will be located in various sections of the province and each will contain 25 camping areas, 25 picnic areas and swimming facilities, with associated roads, trails, clearings and bridges as required.

**Prince Edward Island.**—Twenty areas totalling 900 acres have been developed as provincial parks: Strathgartney Park, a 40-acre tract of land at Churchill on the Trans-Canada Highway between Charlottetown and Borden, is an excellent picnic site and

camping ground with its hardwood groves, fresh spring water and beautiful view over West River and the surrounding country; Lord Selkirk Park, an area of 30 acres at Eldon, is of historic interest in that it contains an old French cemetery and marks the spot on the shoreline where Lord Selkirk landed; Brudenell River Park, comprising 80 acres at Roseneath, has a considerable area of woodland and runs to the shore of the Brudenell River; Jacques Cartier Park, an area of 13 acres at Kildare Beach four miles from Alberton, is of historic significance as the place where Jacques Cartier first landed on Prince Edward Island; Green Park, 27 acres on the Trout River, is an attractive combination of land, trees and water and is also of interest as a historic shipbuilding centre; and Cabot Park at Malpeque, named in honour of the famous explorer, John Cabot, is a 16-acre area with beautiful sandy beaches and an interesting museum. Several small parks have been developed or are under development. The parks are maintained by the Department of Tourist Development. A fee of \$1 a night is charged for trailer space and of 75 cents a night for tent space in all provincial parks.

**Nova Scotia.**—Steady progress is being made in establishing a provincial park system in Nova Scotia, having the ultimate goal of providing facilities at some 15 to 20 camping-picnic parks and some 40 to 60 picnic parks. During the summer season of 1966 there were in operation 10 camping-picnic parks, 35 picnic parks and 12 roadside table sites. Five additional camping-picnic parks were under development and suitable sites were being acquired for more picnic parks.

Provincial financial assistance is available to municipalities for the development of local parks which might serve as adjuncts to the provincial park system. An inventory of the recreational resources of the province is being conducted under the Canada Land Inventory program. This includes a survey of the coast line, one of the results of which will be consideration of the acquisition of good public beaches.

**New Brunswick.**—The Department of Lands and Mines is responsible for the development of the provincial park system, which includes 15 regional park sites ranging in size from 25 to 200 acres, 19 picnic campsites and 30 roadside picnic sites. All picnic and camping grounds contain tables, some form of toilet facility and a potable water supply but more elaborate facilities are available in the larger parks. Most sites are adjacent to or easily accessible from main trunk roads. No entrance fee is charged at any of the sites, but a daily camping fee of \$1.00 to \$1.50 is in effect at 16 of the larger parks and campsites.

The total number of visitors to provincial parks in 1965 exceeded 1,000,000, campers numbering 113,000; 75 p.c. of the campers using park sites come from outside the province and about 40 p.c. of the day-use visitors are non-residents. Most of the park sites are located in rural areas, fairly evenly distributed throughout the province. A five-year ARDA program of expansion and improvement of park and campground facilities is being undertaken, which will include the development of approximately 1,000 tent and trailer sites, accommodation for day-use of beaches, forest and wildlife recreation areas, scenic lookouts, etc., land purchase and provision of special facilities where warranted by intensity of use, such as boats, ramps, docks, canteens and playgrounds.

The Department maintains a Game Farm at Magnetic Hill near Moncton where various species of wildlife to be found in the province are displayed.

**Quebec.**—The Province of Quebec has established six provincial parks and 12 fish and game reserves. Four of the park areas are quite extensive. La Vérendrye Park, 140 miles northwest of Montreal, has an area of 4,953 sq. miles; Laurentide Park, 30 miles north of Quebec City, is 3,613 sq. miles in extent; Mont Tremblant Park, 80 miles north of Montreal, 920 sq. miles; and Gaspesian Park, in the Gaspé Peninsula, 514 sq. miles. Mont Orford Park, situated 15 miles west of Sherbrooke, has an area of 16 sq. miles and Oka Provincial Park near Oka, 1.5 sq. miles.

Fish and Game Reserves together occupy over 43,000 sq. miles. The Chibougamau Reserve, the Mistassini Reserve and the Assinica Reserve, all northwest of Lake St. John,



have areas of 3,400, 5,200 and 3,850 sq. miles, respectively, and farther north is the James Bay Reserve with an area of 25,000 sq. miles. The Aiguebelle Reserve in Abitibi County has an area of 100 sq. miles, the Baie Comeau and Chicoutimi Reserves in the Lake St. John area, 480 and 678 sq. miles, respectively, and the Kipawa Reserve in Témiscamingue County, 3,090 sq. miles. Adjoining Gaspesian Park are the Chic-Chocs and Matane Reserves with areas of 325 sq. miles and 500 sq. miles, respectively, and in Rimouski County is the Horton Reserve with an area of 310 sq. miles; the latter is the only Reserve operated for hunting as well as fishing. Excellent salmon fishing is available in the Gaspé area where the government maintains facilities for anglers along the Port Daniel, St. Jean and Petite Cascadé Rivers. Facilities are also provided along the estuary of the Moisie River on the north shore of the St. Lawrence River about 15 miles east of Sept Îles.

These parks and reserves are wilderness areas of great scenic interest and are for the most part mountainous country threaded with many rivers, lakes and streams and abounding in wildlife. In all of them, except Mont Orford Park and Oka Provincial Park, excellent fishing may be found and most of them have been organized to accommodate sportsmen and tourists in camps, cottages and lodges. Mont Tremblant Park, located close to a famous year-round recreational area, is easily reached in summer by highway from Montreal and is very popular for tent or trailer camping and for swimming and picnicking. Mont Orford has an 18-hole golf course and, in winter, is the rendezvous of Canadian and United States skiers and the site of the Canadian Alpine downhill and slalom championship competitions. Hunting is forbidden in the parks and reserves, except Horton, Joffre, Kipawa and James Bay. In recent years, controlled moose hunting in Laurentide, La Vérendrye and Matane Parks has been allowed to remove the surplus population.

The ever-increasing popularity of camping in Quebec has prompted the Department's Park Service to establish camping facilities. Four areas are now well organized for this purpose—Val Jalbert, one mile east of Roberval in Lake St. John County; Grand Métis, six miles from Mont Joli and Cap Bon Ami, both in the Gaspé Peninsula; and Batiscan on Highway 2, 25 miles east of Trois-Rivières. To expand this program, the Department has purchased the St. Maurice Reserve, a 131-sq. mile area north of Shawinigan in Champlain County.

**Ontario.**—The development of provincial parklands in Ontario continues at a rapid rate. In 1954 there were only eight provincial parks in the province while today there are 92 such parks available for public use. In addition, several new parks are in process of development and 54 other areas encompassing almost 800 sq. miles are reserved for future development. The total area in the Ontario Provincial Park system is about 5,850 sq. miles.

The four largest provincial parks—Algonquin, Quetico, Lake Superior and Sibley—together have an area of about 5,200 sq. miles. Algonquin Park, the largest in the system, is a beautiful area 2,910 sq. miles in extent 180 miles north of Toronto and 105 miles west of Ottawa; it has 14 picnic and campgrounds which are accessible by car from Highway 60 and offers particularly fine canoeing opportunities within its interior. Quetico Park covering 1,750 sq. miles, is accessible by Highway 11 at the Dawson Trail Campground on French Lake and also by water via Basswood Lake in the south. Highway 17 north from Sault Ste. Marie provides access to Lake Superior Park, and Sibley Park may be reached by road from Highway 17 east from Port Arthur.

Under the Wilderness Areas Act, which came into effect in 1959, 42 areas have been established. These areas, widely distributed across the province, vary in size, character and significance but all are regarded as important for their historic, scientific, aesthetic or cultural values. The largest is a 938-sq. mile block covering the Pukaskwa area on the north shore of Lake Superior and the second largest is a 225-sq. mile area of treeless tundra in the northeastern tip of the province at the point where Cape Henrietta-Maria juts out into Hudson Bay; this area is the most southern arctic tundra in the world and its primitive

unspoiled landscapes and characteristically arctic wildlife are being preserved for scientific study and as unique features of the province. All other wilderness areas are less than 1 sq. mile in size.

Ontario has made another advance in meeting the rising pressures for recreational space by applying the concept of the recreational reserve. The recently created North Georgian Bay Recreational Reserve covers 4,500 sq. miles of interesting country lying generally between Algoma and Parry Sound on the north shore of Georgian Bay and including the channel between Manitoulin Island and the mainland, the 30,000 Islands, the famous route of the voyageurs via the French River, the remaining shoreline of Lake Nipissing and the LaCloche Mountains. The Reserve is not a National Park nor is it a Wilderness Area but an area following a normal course of development which is already used extensively for recreation. The plan is, by guiding the evolution of the area, to realize its full potential as a recreational paradise serving all types of needs and co-existing with a landscape of normal activity.

Ontario's vast lakeland areas make this province a vacation paradise and the number of park visitors increases year by year. Attendance in 1965 was 8,875,668 persons and campers numbered 902,472. Charges for vehicle entry are \$1.00 a day or \$5.00 a year and camping charges are \$1.50 a night or \$9.00 a week. At supervised tent and trailer campsites, picnic tables, fireplaces, tested drinking water and washrooms are provided. New campsites are being added at the rate of 500 to 1,000 a year and in 1965 numbered approximately 16,000.

Interpretative and naturalist programs are being continually expanded and such services as museums, outdoor exhibits, conducted trips, illustrated talks and labelled nature trails were available in 19 parks in 1965.

The parklands of Ontario are administered by the Parks Branch of the Department of Lands and Forests. Detailed information is contained in various booklets and maps available on request from the Department of Lands and Forests, Parliament Buildings, Toronto.

**Manitoba.**—The provincial park system of Manitoba, administered by the Parks Branch of the Department of Mines and Natural Resources, consists of four major classifications of outdoor recreational development: *provincial parks* which are large-area parks with a variety of natural attractions suited to many outdoor activities; *recreational areas*, the natural attractions of which are modified to accommodate recreational activities of an intensive nature; *waysides*, or highway parks which enhance travel routes and provide attractive rest stops; and *heritage areas*, which are areas of outstanding scenic beauty or have natural and physical features of special provincial interest.

Manitoba's Centennial \$5,000,000 parks program includes the development of three new provincial parks, the rehabilitation and expansion of existing recreational areas with a view to providing new camping and improved day-use facilities, and the development of the heritage area program to preserve and interpret sites, large and small, illustrating the natural and human history of the province. A survey has been conducted to establish a development policy for waysides and a study of the shoreline potentials along Lake Winnipeg and Lake Manitoba will provide guidance for the future development of the interlake area.

At present Manitoba has nine provincial parks with a total area of 2,854 sq. miles, of which area 1,945 sq. miles are within provincial forests. In addition, there are 40 recreational areas ranging in size from 2.5 acres to 2,000 acres, and many picnic sites, campgrounds and trailer parks. Hunting and fishing lodges are common and accommodation in some of the parks runs the gamut of modern resorts and motels, hotels and cabins. Golf, tennis, swimming and boating facilities are available, as well as children's playgrounds. About 115 commercial concessions operate within the park system giving a variety of services ranging from restaurants to riding stables and boat marinas. The number of park visitors continues to increase impressively each year. In 1964 they

totalled nearly 1,500,000 and camping groups accommodated in tents, trailers or truck campers numbered about 31,000. Admission fees to provincial parks are 50 cents per car per day or \$3 per season.

**Saskatchewan.**—Saskatchewan has 14 provincial parks with a total area of 1,803 sq. miles. Cypress Hills, Duck Mountain, Greenwater Lake and Moose Mountain are operated as summer resorts with chalet, lodge, cabin and trailer accommodation as well as camp and picnic facilities. The other parks have trailer sites and camping, picnicking, boating and swimming facilities. Recreational activities include fishing, boating, swimming, golf, tennis, dancing, baseball, hiking, nature study, horseback riding, etc., and the parks are all well fitted with playground and beach equipment for children. In Cypress Hills Park, elk, antelope, deer, sharp-tailed grouse and beaver are present, and the streams have been stocked with brook and other trout. Heavy stands of tall, straight lodgepole pine and white spruce provide a unique forest cover in this area. In Duck Mountain, Moose Mountain and Greenwater Lake Parks, moose, elk and bear appear variously, and deer and beaver are common to all, as well as several varieties of grouse and many species of water and smaller land birds. Spruce, poplar and white birch provide excellent cover for wildlife. Pickerel, pike and perch are prevalent in most of the lakes. Lake trout are ardently sought by fishermen in the northern lakes. Three wilderness parks—La Ronge, Nipawin and Meadow Lake—offer wilderness-style canoe routes and ‘fly-in’ commercially operated fishing and hunting camps. Many roadside picnic grounds are located throughout the province and several excellent Trans-Canada Highway campsites are in use.

Sites of historic interest are marked throughout the province and include the Touchwood Hills Hudson's Bay Post, Cannington Manor Historic Park and Wood Mountain Historic Park, all of which have picnic facilities.

**Alberta.**—In Alberta, 44 provincial parks have been established, 41 of which, with a total area of approximately 170 sq. miles, are in use and continuing development. Cypress Hills Provincial Park with an area of 78 sq. miles is the largest and is situated in the southeast portion of the province. Other parks are: Aspen Beach, Beauvais Lake, Big Hill Springs, Big Knife, Bow Valley, Bragg Creek, Crimson Lake, Cross Lake, Dillberry Lake, Dinosaur, Entrance, Garner Lake, Gooseberry Lake, Hommy, Jarvis Bay, Kinbrook Island, Lac Cardinal, Little Bow, Little Fish Lake, Long Lake, Ma-Me-O Beach, Miquelon Lake, Moonshine Lake, O'Brien, Park Lake, Pembina River, Red Lodge, Rochon Sands, Saskatoon Island, Sir Winston Churchill, Taber, Thunder Lake, The Vermilion, Tillebrook Trans-Canada Campsite, Wabamun Lake, Williamson, Willow Creek, Winagami Lake, Woolford and Writing-on-Stone. These parks are generally provided with picnic, camping and playground facilities and are maintained by the Department of Lands and Forests primarily for the recreation and enjoyment of the residents of the province. There is a park within easy reach of almost every town. The most northerly park is Lac Cardinal, about 28 miles southwest of Peace River, and the southernmost park is Writing-on-Stone which adjoins the Alberta-Montana border. Alberta's provincial parks were visited by 2,757,500 tourists and vacationists in 1965.

In addition to the recreational parks, 23 sites have been established to mark and preserve locations of historic interest. They include: Athabasca Landing, Buckingham House, Bugnet Plantation, Coronation Boundary Marker, Early Man Site, Fort DeL'Isle, Fort George, Fort Vermilion, Fort Victoria, Fort White Earth, Frog Lake Massacre, Hay Lakes Telegraph Station, Massacre Butte, Ribstones, Rocky Mountain House Fort, Standoff, Stephansson, Twelve Foot Davis, Shaw Woolen Mill, Rev. George McDougall's Death Site, Fort McLeod, Indian Stone Pile and St. Joseph Industrial School.

Provided also for Albertans are the Wilderness Provincial Park, which adjoins Jasper National Park in the north and extends along the British Columbia border, and two wilderness areas established under the Forest Reserves Act in 1961. The Wilderness Provincial Park has an area of 2,149 sq. miles, Siffleur Wilderness 159 sq. miles and White



Goat Wilderness 489 sq. miles. The wilderness areas have been set aside to preserve as far as possible the natural scene and are not subject to any development or provided with roads.

**British Columbia.**—There are 239 (170 developed) provincial parks in British Columbia, having a total area of about 10,018 sq. miles. These parks are classified as A, B, C and Nature Conservancy Areas. Class A parks are intended to preserve outstanding natural, scenic and historic features of the province for public recreation; they have a high degree of legislative protection against exploitation and alienation. Class B parks are also primarily for the protection of natural attractions but other resource use is permitted if it does not unduly impair recreational values. Class C parks are intended primarily for the use of local residents and are generally managed by local park boards. Nature Conservancy Areas in any park are fully protected from resource development and are dedicated to a variety of recreational uses. There are immense wilderness areas such as Tweedsmuir Park and Wells Gray Park and outstanding scenic and mountain reserves such as Garibaldi, Mount Robson, Manning and Bowron Lakes Parks. The formal gardens of Peace Arch Park are a monument to the goodwill between Canada and the United States. Vancouver Island has a chain of small forested parks that have achieved tremendous popularity with tourists; the best known are Little Qualicum Falls, Miracle Beach and Goldstream. The famous gold town of Barkerville has been restored and become the first Provincial Historic Park; Fort Steele in the East Kootenay area is also being restored to preserve another of British Columbia's pioneer settlements. Nine marine parks with mooring facilities and campsites have been developed on the islands of the Strait of Georgia for the benefit of water-borne vacationers.

The popularity of British Columbia's parks, with their integrated campsites and picnic areas, is attested by the fact that about 4,800,000 park visits were recorded during 1965; about 25 p.c. of the visitors were campers and the remainder day visitors. Records show that Mount Seymour, Cultus Lake and Alouette Lake Parks were the most heavily used.

### Subsection 3.—Ottawa, Canada's National Capital\*

Canada's capital city lies in a magnificent natural setting, its hub high on the limestone bluffs bordering the Ottawa River where it tumbles over the Chaudière Falls and where, a short distance downstream, the lazy Rideau River falls in twin curtains over the cliffs from the south and the once-turbulent Gatineau River flows in from the north. Here Champlain paused and portaged on his way westward in 1613. The priests, soldiers and traders who followed him travelled past these cliffs and around the rapids. By this place passed most of the great overland explorers. Champlain called the river "la grande rivière des Algonmequins" and early English traders called it the Grand River. "Ottawa" is the anglicized form of Outaouac or Outaouais, the name of a tribe of Indians from Lake Huron who traded with the French in the seventeenth century. They carried their furs by the river that now bears their name. The first settlement in this region is associated with an American from Massachusetts, Philemon Wright, who, in 1800, located on the north shore of the river where Hull stands today, bringing with him families and tradesmen and forming the nucleus of a busy community. Taking advantage of Britain's needs for squared timber, Philemon Wright ran the first raft of white pine to Quebec in 1806, and started the Ottawa River squared timber trade that soon came to be fostered by British tariff concessions. This was the beginning of a great industry that remained the life blood of the community for half a century.

Settlement on the south side of the river did not begin in earnest until a generation later. During the War of 1812 communications by the St. Lawrence River, the main route to the settled area in Upper Canada, had been under American attack and a safer water route between Montreal and the Great Lakes was considered an urgent need for the

\* Prepared in the Information and Historical Division, National Capital Commission, Ottawa.

future. Ten years were spent in sporadic investigation and consideration of a route by the Rideau and Cataraqui River systems and finally, in 1826, Lieutenant-Colonel John By of the Royal Engineers was sent to the Chaudière to build a canal from that point to Kingston. The next year two companies of Royal Sappers and Miners, numbering 162 men, began the construction. To Colonel By also goes the credit of planning the original townsite which was, in 1827, named Bytown in his honour. Where Ottawa's central area is today, the Earl of Dalhousie, the then Governor-in-Chief, had wisely secured commanding ground for the Crown in 1823 and, adjacent to this, Colonel By laid out two settlements called Upper Town and Lower Town, separated by part of the Government lands called Barrack Hill. The canal was finished in 1832 and the town that sprouted around Colonel By's military camp began to grow and prosper. Stores and banks were set up, churches and schools were built and a little manufacturing community was started in New Edinburgh near Rideau Falls.

Bytown was now the inland centre of the squared timber trade and by 1850 could boast of some fine stone buildings, among them the home of Thomas MacKay which today forms the central part of the residence of the Governor General of Canada. A change then occurred in the timber industry, the British system of preferential import duties on squared white and red pine logs was abandoned and trade began to decline. However, by this time the accessible forest stands of the eastern United States were depleted and sawn lumber was needed to house a growing population. Also, the American railway and canal network had extended to the Canadian border, making transportation easy. Encouraged by these favourable conditions and the newly recognized availability of hydro-electric power, a group of American and other lumbermen came to Bytown, beginning in 1853, and established sawmills by the Chaudière Falls. Soon the islands about the falls and the flats on both shores were covered with lumber piles and loaded barges were on their way to the American market. The sawmill industry began its rise to dominating importance.

At the beginning of 1855, Bytown became a city and took the name Ottawa, just in time to receive a great honour and to assume a great responsibility. The United Province of Canada, since its formation in 1841, had shuttled its capital between Kingston, Toronto, Montreal and Quebec and was now trying to agree on a permanent site. At the end of 1857 Queen Victoria settled the dispute by choosing Ottawa. Government buildings for the new capital were designed and contracts were let in 1859 for their construction. However, the task was hard and the cost much greater than expected and it was not until 1866 that the government of the Province of Canada actually moved to Ottawa. The next year the first Parliament of the new Dominion of Canada met in an incomplete Parliament Building, situated on the former Barrack Hill.

The nation enjoyed a brief prosperity during most of the next decade. Ottawa grew and the government expanded as the Dominion extended its authority over more and more of British North America. In 1871, shortly after Confederation, the city had a population of about 22,000. Many fine homes and stores in stone and brick were built. The Departmental Buildings, flanking the Parliament Building on the Hill, were enlarged. An old wooden City Hall near the Canal was replaced in 1876 by a fine stone building and a large post office was erected at the city's centre. By the end of the nineteenth century, Ottawa was a flourishing industrial centre with a population of 59,000. It remained the hub of the lumbering industry of Eastern Canada, had the largest paper mills in the country and the leading match factory in the world. However, little effort had been made to preserve or enhance its natural beauty until the Ottawa Improvement Commission was set up in 1899 and the Driveway along the Rideau Canal was begun. Even so, progress was slow in this direction but in the years up to the beginning of the First World War the city centre began to take on a new face. Many new government buildings were erected—laboratories, the Dominion Observatory and the Geodetic Building at the Experimental Farm, the Archives Building, the Victoria Memorial Museum, the Royal Canadian Mint and the Connaught Building. In 1912, the Grand Trunk Railway completed construction of the Union Station and of the French renaissance-style Chateau Laurier whose turrets



continue to grace the Ottawa skyline. During this period several studies were made and plans recommended for the improvement of the National Capital but these were deferred because of the War and for other reasons. Fire destroyed the Parliament Building in 1916, leaving standing only the octagonal library now forming part of the magnificent building of modern Gothic architecture which replaced it but was ten years in the building. The city beautification program was continued by the Ottawa Improvement Commission on a slightly increased budget until 1927; in that year the Commission was reconstituted as the Federal District Commission and the program then proceeded at a more accelerated rate. The second Commission was succeeded in 1959 by the National Capital Commission.

The City of Ottawa today, with its population of close to 300,000, is well on its way to becoming a national capital of enduring beauty and grace. It is a self-governing municipality, administered by an elected City Council, but there are underlying differences which set it apart from all other major Canadian centres. Historically, it has always been the meeting place for the two founding peoples. It is the national Seat of Government and throughout the years the federal authorities have recognized the need of creating in and around the National Capital an area of pride, not only for the residents of the city and its environs but for all Canadians.

Much of the work of the National Capital Commission hinges on the implementation of a long-range Master Plan, developed by the late Jacques Gréber, a famed French town-planner. The Gréber Plan tabled in the House of Commons in 1951, although not officially recognized by the Provinces of Quebec and Ontario, is the basis of much that has been accomplished. In fact, ten years after its publication it was reported that all its major proposals were in process of realization.

Success of the Plan, now and in the future, is dependent on co-operation between the Federal Government, the governments of the Provinces of Ontario and Quebec, the Cities of Ottawa, Hull and Eastview and about sixty-five other autonomous municipalities in the National Capital Region. The Plan itself was conceived as a memorial to all Canadians who gave their lives in the defence of Canada during the Second World War and was projected over a fifty-year period. It called first for the establishment of a National Capital Region encompassing some 900 sq. miles but later, in 1959, this was doubled to 1,800 sq. miles—about half in Ontario and half in Quebec. In accordance with its proposals, large "open spaces" are being provided in the Ottawa-Hull area, part of which involves the restoration of the shores of the waterways. Major restorations have taken place at Rideau Falls opposite the Ottawa City Hall, at Jacques Cartier Park in Hull, and at Vincent Massey Park which is a 75-acre urban park in the heart of Ottawa, linked with the 50-acre Hog's Back Park surrounding the limestone chasm of Prince of Wales Falls on the Rideau River. Forty miles of riverfront land are under the control of the Commission and countless delightful areas are accessible to the public. There are some 50 miles of wide, landscaped driveways throughout Ottawa which will be extended by another 30 miles in coming years. In addition the Commission maintains 13 city-owned parks in Ottawa, including Rockcliffe and Strathcona Parks. At present Ottawa has 4,000 acres of open space.

The relocation of government buildings to suitable scattered sites has been under way for several years. The first development took place at Tunney's Pasture located on the Ottawa River in the west-central area of Ottawa. The Pasture now contains 18 buildings of various sizes. Confederation Heights, in the south-central area adjoining Hog's Back Park, now contains six attractive and functional buildings that house Government Departments, and the large Government Printing Bureau was established in Hull. In all, the grounds of more than 140 government buildings are cared for by the Commission.

Two key proposals in the Master Plan with long-range effects on Ottawa's future are the creation of the Greenbelt and the removal of railway trackage from the central sections. The Greenbelt, designed to control urban sprawl and to provide sites for governmental, industrial and research development, is a unique planning measure in North America. Within its 41,500 acres the Commission encourages agriculture, reforestation and public recreation areas.



Railway relocation, possibly the most important element of the National Capital Plan, will be largely completed by 1967. It involves removal of 32 miles of track, much of it in the central sections of the city, elimination of 72 level crossings, many in high density urbanized areas, and is a prime consideration in Federal Government redevelopment of LeBreton Flats, the old Union Station sector in downtown Ottawa which has now been cleared, and sections of Sussex Drive near the approaches of the new Macdonald-Cartier Bridge across the Ottawa River.

North of Ottawa and Hull, in Quebec, an 88,000-acre recreation area known as Gatineau Park has been developed by the Commission. It is a wilderness area, extending northward from Hull for 35 miles. With 25 miles of parkway, magnificent lookouts, lakes, fishing streams, beaches, picnic areas, camping sites and walking trails, the park is one of the finest recreation areas in Canada, enjoyed by tens of thousands of visitors yearly.

In addition to its own programs, the National Capital Commission extends planning aid and advice to municipalities in the National Capital Region but only on request; at no time does the Commission seek to impose its proposals on the autonomous governments concerned with local affairs in the region. Financial aid in the form of grants is made to municipal governments in special circumstances.

The Commission has 20 members, including a chairman, and employs between 600 and 800 people, depending on season, in carrying out its development and maintenance programs. It reports to Parliament through the Minister of Public Works.

## Section 2.—Wildlife Resources and Conservation\*

Wildlife in Canada is an important renewable natural resource. In the early days wildlife was, and in remote areas still is, a form of sustenance in the hinterland, and trade in fur determined the course of exploration and settlement. During the period of the opening up of the country, a number of mammals and birds became seriously depleted or extinct. The passenger pigeon, the great auk and the Labrador duck became extinct, the buffalo vanished from the prairies, and elk, prong-horn antelope, and muskoxen were reduced to small fractions of their former numbers. Wildlife habitat has been reduced by the cutting and burning of the forests, the pollution of streams, industrial and urban development, drainage of wetlands, building of dams, and other changes in the land.

Wildlife has been changed and influenced by man to the degree that he has changed and influenced the environment for wildlife. The arctic and alpine tundra, one of Canada's major vegetational regions, has been changed hardly at all; the adjacent subarctic and subalpine non-commercial forests have been changed principally as a result of increased human travel causing more forest fires; the great forest farther south has not lost its real character through being managed for commercial use; cultivable lands, whether originally forest or grassland, have completely changed but often they and the managed forest are better for some forms of wildlife than the original wilderness. There are more moose, deer, ruffed grouse and probably more coyotes than in Indian days. Fur species, such as beaver and muskrat, are easily managed and many small mammals and birds thrive better in fields and woodlots than in the virgin forests, provided that they are not poisoned by pesticides. At the present time, the harvestable surplus of game and fur species across Canada is seldom fully utilized and it is quite clear that wildlife will remain abundant wherever there is suitable habitat and enlightened management.

Thus, Canada today is known throughout the world for the wealth and variety of its wildlife. It maintains most or all the existing stocks of woodland caribou, mountain sheep, wolves, grizzly bears and wolverines, to mention a few. And these animals exist not only

\* A series of special articles relating to the wildlife resources of Canada has been carried in previous editions of the Year Book. See the list of special articles in Chapter XXVII, Part II, under the heading of "Fauna and Flora".

because of the vastness of their habitat but also because of man's efforts to preserve them. There is evidence of concern about the preservation of wildlife by the early Canadians; there were game laws in force in the original provinces when all but a few thousand acres of land were still the patrimony of the Indians. In 1885 pioneer conservationists were instrumental in establishing Banff Park in Alberta, and in 1887 a bird sanctuary, the first on the Continent, was established at Last Mountain Lake in Saskatchewan. Concern to preserve Canada's wildlife heritage led to the complete protection of wood bison in 1893 and to the purchase and establishment of a nucleus herd of plains bison at Wainwright in Alberta in 1907. Thus was formed the basis of wildlife conservation efforts, which, for a long time, took the form of protection of certain species from destruction by man or predator. Better knowledge of nature's operations and recognition that many factors combine to cause fluctuation in wildlife numbers are now being reflected in scientifically based hunting seasons and limits. The science of animal numbers is new and sometimes runs counter to popular prejudice but it is well understood that any area will support only so many animals, and species that are highly productive must have a quick turnover. Consideration of wildlife must never be separated from consideration of its environment and if the environment is fully stocked the annual increment need only replace the losses. All extra is surplus, only part of which is taken by predators and part, if the animal is a game species, by man.

As a natural resource, wildlife within the provinces comes under the administration of the respective provincial governments; wildlife on federal lands and certain problems of national or international interest are the concern of the Federal Government.

**The Canadian Wildlife Service.**—The Canadian Wildlife Service deals with most wildlife problems coming within the jurisdiction of the Federal Government. It was organized in 1947 to meet the growing need for scientific research in wildlife management and became a Branch of the Department of Indian Affairs and Northern Development in 1966. The Service conducts scientific research into wildlife problems in the Northwest Territories, Yukon Territory and the National Parks, advises the administrative agencies concerned on wildlife management, and co-operates in the application of such advice. It administers the Migratory Birds Convention Act, provides co-ordination and advice in connection with the administration of the Game Export Act in the provinces, deals with national and international problems relating to wildlife resources, and co-operates with other agencies having similar interests and problems in Canada and elsewhere.

The Migratory Birds Convention Act was passed in 1917 to give effect to the Migratory Birds Treaty signed at Washington in 1916. The Canadian Wildlife Service is responsible for recommending the annual revision of the Migratory Bird Regulations, which govern such matters as open seasons for migratory game birds and other hunting details, taking and possessing migratory birds for scientific or propagating purposes, eiderdown collecting, etc. The Act and Regulations thereunder are enforced by the Royal Canadian Mounted Police, and in both administration and enforcement co-operation is received from provincial authorities. There are 106 migratory bird sanctuaries in Canada, having a total area of 43,887 sq. miles. Bird banding provides valuable information on the migration of birds and their natural history and is especially useful in waterfowl management. Serially numbered bands supplied by the United States Bureau of Sport Fisheries and Wildlife are used in Canada as well as in the United States.

A national wildlife policy and program was tabled in the House of Commons in 1966 after comprehensive discussions with the provinces and citizens' conservation organizations. The new policy is designed to increase research programs, to bolster dwindling wildlife resources, to provide better information to serve all wildlife interests, and to improve the supply of professionally trained wildlife biologists. Many research projects under way were continued during 1966. These included the study, in co-operation with the governments of Manitoba and Saskatchewan and the Council of the Northwest Territories, of barren-ground caribou and of wolves that prey upon caribou. Human utilization is still



the most important factor in herd reduction but other significant factors from time to time include effects of forest fires on winter range, predation, accidents, and poor calf survival. Studies were continued on mink, muskrat and beaver in the Mackenzie District, and of polar bear in Keewatin and Franklin Districts. Big game mammals in the National Parks were also the object of continued study, special attention being given to mountain sheep and elk in the mountain parks of Alberta, where large populations of those species facilitate investigations. In Wood Buffalo Park, investigations into the problems of disease and low reproductive rates among bison were continued in the hope that some control of each might be achieved. A small herd of wood bison was captured, certified as disease-free and transferred to Elk Island National Park for propagation and eventual release in areas of the species' original range. Studies of the relationship between forests and wildlife were initiated in New Brunswick in co-operation with the federal Department of Forestry and Rural Development.

Damage to cereal crops by wild ducks and sandhill cranes continued to receive intensive study and much time was devoted to other species greatly reduced in number or in danger of extinction, such as the trumpeter swan and whooping crane. Investigations of migratory waterfowl were expanded. Kill surveys previously conducted in Prince Edward Island, New Brunswick, Quebec and Ontario were replaced by a single country-wide survey based on sales records of the Canada Migratory Game Bird Hunting Permit, which was used for the first time in 1966. A crop-damage survey in the Prairie Provinces is being conducted annually. Arctic bird-banding programs were continued, as were pilot programs of wetlands leasing. The loss of wetlands to drainage and filling for agricultural and other purposes poses a serious threat to the waterfowl resource. A major program of preserving wetlands by leasing and acquisition will begin in 1967.

The Service opened a new Prairie Waterfowl Research Centre on the campus of the University of Saskatchewan in Saskatoon in 1966. Also, a national registry of pesticide residues in wildlife has been established. Research in limnology is oriented toward the maintenance of adequate stocks of fish. Subjects of research include productivity of National Park waters, the biology of fish and associated fauna. Adequate stocks of game fish are provided and maintained through modern methods of management where they can be applied without detriment to the aesthetic values of the areas concerned.

The Service's research staff totals 59. Specialists covering mammalogy, limnology, migratory bird populations, migratory bird habitat, ARDA, pesticides, pathology and biometrics are stationed at the head office in Ottawa. Offices are located at Fort Smith and Inuvik, N.W.T., Whitehorse, Y.T., Vancouver, B.C., Edmonton, Alta., Saskatoon, Sask., Winnipeg, Man., Ottawa and Aurora, Ont., Quebec, Que., Sackville, N.B., and St. John's, Nfld. Headquarters for the Western Region is in Edmonton and for the Eastern Region in Ottawa. A number of university graduates and undergraduates are engaged annually to assist in summer field work. Sixteen officers are engaged in an inventory of wildlife land capability under the ARDA program; the Canada Land Inventory will cover 1,000,000 sq. miles of Canada, primarily in the southern portions, and will be completed in the next four years. A program to offer scholarships of \$1,200 to graduate students in wildlife and allied fields was in its third year in 1966, when ten scholarships were awarded.

**Provincial Government Wildlife Conservation Measures.**—As stated previously, each province has jurisdiction over its own wildlife resources. The measures adopted by the respective provincial governments to conserve these resources are outlined in the 1963-64 Year Book at pp. 46-52. The conservation of wild fur-bearing animals in the different provinces is discussed in the Fisheries and Furs Chapter, Part II, and information on provincial conservation of fisheries resources is given in Part I of the same Chapter, together with data relating to the work of the Fisheries Research Board of Canada and to international fisheries conservation (see Index).



## PART III.—CLIMATE AND TIME ZONES\*

### Section 1.—Climate

Just as there are great differences in the weather throughout Canada at any given instant, there are also many climates. These climates are similar to those in Europe and Asia extending from the Arctic down to the mid-northern hemispheric latitudes. Because Canada is situated in the northern half of the hemisphere, most of the country loses more heat annually than it receives from the sun. The general atmospheric circulation compensates for this and at the same time produces a general movement of air from west to east. Migrant low pressure areas move across the country in this "westerly zone", producing storms and bad weather. In intervals between storms there prevails the fair weather associated with high pressure areas.

Although the movement of migrant high and low pressure systems within the zone of the westerlies is the most significant climatic control over Canada, the physical geography of North America contributes greatly to the climate. On the West Coast, the western Cordillera limits mild air from the Pacific to a narrow band along the coast, while the prairies to the east of the mountains are dry and have extreme temperatures because they are shielded from the Pacific Ocean and are in the interior of a large land mass. In addition, the prairies are part of a wide north-south corridor open to rapid air flow from either north or south which often brings sudden and drastic weather changes to this interior area. On the other hand, the large water surfaces of Eastern Canada produce a considerable modification to the climate. In southwestern Ontario winters are milder with more snow, and in summer the cooling effect of the lakes is well illustrated by the number of resorts along their shores. On the East Coast, the Atlantic Ocean has considerable effect on the immediate coastal area where temperatures are modified and conditions made more humid when the winds blow inland from the ocean.

The following table gives temperature and precipitation data for typical stations in the various regions of Canada. Temperatures in this table refer to observations taken in a thermometer shelter which has been placed in a representative location with the thermometer bulbs four feet above the surface of the ground. Mean January and July temperature data are based on records over the 30-year period from 1931 to 1960 except for far northern stations where the available period of record is shorter. After an average temperature is obtained for each day in January over a 30-year period, the mean January temperature may be arrived at by striking a mean of these 930 daily values. The mean July temperatures may be obtained in a similar manner. The highest and lowest temperatures on record refer to the absolute extremes for the entire period of record at each station. Average dates are shown for the last occurrence in spring of a temperature of 32°F or lower and for the first occurrence in autumn of freezing temperatures at the four-foot level in the thermometer shelter.

The official Canadian rain gauge is a small cylinder in which the rain is caught and then measured to one hundredth of an inch with a simple measuring device. Freshly fallen snow is measured as it lies on the ground and recorded to the tenth of an inch. Total precipitation values as shown in the table are the sum of the total rainfall and one tenth of the total snowfall. For the purposes of this table, a day with precipitation is one on which at least one hundredth of an inch of rain or one tenth of an inch of snow has fallen.

\* Sections 1 and 2 of this part were prepared by the Meteorological Branch of the Department of Transport, Toronto. A comprehensive study on *The Climate of Canada*, also prepared by the Meteorological Branch, was carried in the 1959 Year Book, pp. 23-51. Supplementing that textual material, detailed tabulations of climatic factors for 45 individual meteorological stations across the country were carried in the 1960 Year Book, pp. 33-77. A reprint is available from the above source giving the complete textual and tabular data.

## Temperature and Precipitation Data for Typical Stations in the Various Districts

District and Station	TEMPERATURES (Fahrenheit)						PRECIPITATION		
	Mean Jan.	Mean July	Highest on Record	Lowest on Record	Av. Dates of Freezing Temperatures (32° F or Lower)		Total (All Forms) <sup>1</sup>	Snowfall	Av. Number of Days (All Forms)
					Last in Spring	First in Autumn			
							in.	in.	
<b>Newfoundland—</b>									
Island of Newfoundland—									
Belle Isle.....	13.5	49.1	73	-31	June 20	Sept. 27	33.56	92.0	152
Gander.....	20.8	62.3	96	-17	June 3	Oct. 6	40.35	127.1	194
St. Andrew's.....	24.6	59.3	81	-11	June 4	Sept. 27	42.66	64.6	156
St. John's.....	24.3	59.7	93	-21	June 6	Oct. 9	60.98	149.7	201
Labrador—									
Cartwright.....	7.5	55.7	97	-36	June 24	Sept. 6	38.15	183.1	165
Goose.....	2.2	61.4	100	-38	June 5	Sept. 16	32.93	157.6	164
<b>Maritime Provinces—</b>									
Prince Edward Island—									
Charlottetown.....	19.6	65.6	98	-27	May 13	Oct. 17	43.49	105.0	156
Nova Scotia—									
Annapolis Royal.....	25.5	65.3	91	-13	May 17	Oct. 8	45.61	75.8	144
Halifax.....	26.0	65.3	99	-21	May 10	Oct. 15	54.39	70.9	159
Sydney.....	24.3	64.9	98	-25	May 21	Oct. 16	51.37	95.5	169
Yarmouth.....	27.7	61.9	86	-12	May 3	Oct. 25	50.00	81.7	151
New Brunswick—									
Chatham.....	14.8	66.7	102	-43	May 22	Sept. 21	41.29	114.2	152
Grand Falls.....	10.6	65.0	98	-46	May 27	Sept. 21	40.50	108.1	101
Moncton.....	17.8	65.6	99	-36	May 22	Sept. 23	40.96	108.6	130
Saint John.....	19.5	63.0	94	-28	May 17	Sept. 30	53.57	97.7	170
<b>Quebec—</b>									
Northern—									
Fort Chimo.....	-11.0	53.3	90	-51	June 28	Sept. 3	16.47	69.5	157
Knob Lake.....	-9.4	55.1	88	-59	June 19	Sept. 2	29.40	134.5	193
Nitchequon.....	-9.1	56.7	90	-57	June 11	Sept. 13	29.64	108.4	193
Port Harrison.....	-13.0	48.0	86	-57	July 2	Aug. 25	15.51	64.5	134
Southern—									
Bagotville.....	3.5	64.2	96	-46	May 27	Sept. 19	37.67	127.0	160
Father Point.....	10.8	58.4	99	-33	May 22	Sept. 26	32.73	110.7	147
Montreal.....	16.3	70.8	97	-29	Apr. 27	Oct. 18	41.19	98.6	160
Quebec.....	11.3	66.7	97	-34	May 11	Oct. 6	41.67	119.8	171
Sept Îles.....	7.1	59.6	90	-46	June 1	Sept. 15	42.39	164.3	149
Sherbrooke.....	15.2	68.2	98	-42	May 16	Sept. 25	39.15	95.0	176
<b>Ontario—</b>									
Northern—									
Kapuskasing.....	-0.1	63.2	101	-53	June 10	Sept. 5	33.78	123.1	142
Port Arthur.....									
Fort William.....	7.2	63.5	104	-42	June 1	Sept. 9	29.40	84.6	137
Sioux Lookout.....	-0.4	65.7	103	-51	May 23	Sept. 19	27.59	85.5	157
Trout Lake.....	-11.0	60.7	96	-54	June 11	Sept. 15	23.89	77.0	146
Southern—									
London.....	22.9	69.6	106	-27	May 8	Oct. 6	37.19	72.5	160
Ottawa.....	12.6	69.2	102	-38	May 12	Sept. 28	33.55	86.1	145
Parry Sound.....	16.3	67.5	100	-39	May 15	Oct. 1	39.12	111.7	162
Toronto.....	25.0	71.5	105	-27	Apr. 30	Oct. 17	30.56	54.9	143
Windsor.....	25.5	71.8	101	-27	Apr. 30	Oct. 19	32.61	38.0	139
<b>Prairie Provinces—</b>									
Manitoba—									
Churchill.....	-17.5	53.6	96	-57	June 24	Sept. 14	15.99	69.1	102
The Pas.....	-7.0	64.8	100	-54	May 30	Sept. 21	17.76	54.7	102
Winnipeg.....	0.1	68.3	108	-54	May 26	Sept. 19	20.35	51.3	119
Saskatchewan—									
Regina.....	1.6	66.7	111	-56	May 29	Sept. 15	15.53	43.0	113
Saskatoon.....	1.0	66.6	104	-55	May 27	Sept. 14	13.86	43.2	104
Swift Current.....	8.9	66.9	107	-54	May 30	Sept. 22	15.27	44.4	112

<sup>1</sup> Total rainfall and one tenth of the total snowfall.

## Temperature and Precipitation Data for Typical Stations in the Various Districts—concluded

District and Station	TEMPERATURES (Fahrenheit)						PRECIPITATION		
	Mean Jan.	Mean July	Highest on Record	Lowest on Record	Av. Dates of Freezing Temperatures (32° F or Lower)		Total (All Forms) <sup>1</sup>	Snowfall	Av. Number of Days (All Forms)
					Last in Spring	First in Autumn			
							in.	in.	
<b>Prairie Provinces—</b> concluded									
Alberta—									
Beaverlodge.....	7.4	60.2	98	-54	May] 28	Sept. 2	17.91	68.1	127
Calgary.....	14.2	62.0	97	-49	May 27	Sept. 11	17.44	58.5	105
Edmonton.....	6.6	63.1	99	-57	May 18	Sept. 19	18.64	53.8	126
Medicine Hat.....	12.1	69.1	108	-51	May 16	Sept. 21	14.29	48.7	98
<b>British Columbia—</b>									
Pacific Coast and Coastal Valleys—									
Estevan Point.....	40.4	56.6	84	7	Apr. 4	Nov. 15	115.39	10.7	203
Langara.....	37.1	54.4	78	6	Apr. 1	Nov. 28	66.39	24.3	255
Prince Rupert.....	35.2	56.2	90	-6	Apr. 19	Nov. 3	94.41	32.7	229
Vancouver.....	37.2	63.8	92	0	Apr. 3	Oct. 28	41.12	17.8	179
Victoria.....	39.4	60.1	95	6	Mar. 1	Dec. 6	27.41	11.5	149
Southern Interior—									
Glacier.....	13.5	57.9	98	-32	June 9	Sept. 8	57.10	37.2	192
Kamloops.....	21.4	69.6	107	-37	May 3	Sept. 26	9.71	32.5	83
Penticton.....	27.4	68.4	105	-16	May 10	Sept. 29	12.08	25.5	109
Princeton.....	17.9	63.4	107	-49	June 4	Sept. 13	14.17	58.5	105
Central Interior—									
Barkerville.....	15.4	54.4	96	-52	June 25	Aug. 16	45.25	226.1	187
McBride.....	16.0	60.5	100	-50	June 17	Aug. 23	21.31	84.3	125
Prince George.....	11.6	58.9	102	-53	June 13	Aug. 25	24.67	79.6	166
Smithers.....	14.9	57.5	93	-47	June 23	Aug. 15	20.27	73.3	147
Northern Interior—									
Atlin.....	8.6	53.5	87	-54	June 11	Sept. 4	10.95	43.4	70
Dease Lake.....	-2.3	55.1	93	-60	July 2	Aug. 16	15.25	65.8	144
Fort Nelson.....	-8.4	62.2	98	-61	May 27	Sept. 4	17.13	67.7	115
Fort St. John.....	4.2	61.1	92	-53	May 29	Sept. 5	17.42	76.0	122
Smith River.....	-11.4	57.3	92	-74	June 24	Aug. 11	18.28	79.9	151
<b>Yukon Territory—</b>									
Dawson.....	-17.6	59.8	95	-73	June 3	Aug. 22	12.67	49.9	119
Snag.....	-18.5	57.0	89	-81	June 15	Aug. 9	14.07	53.2	109
Watson Lake.....	-11.5	59.1	93	-74	May 29	Sept. 1	16.98	82.5	141
Whitehorse.....	-0.6	57.5	91	-62	June 5	Aug. 31	10.05	45.6	92
<b>Northwest Territories—<sup>2</sup></b>									
Mackenzie Basin—									
Fort Good Hope.....	-22.0	60.5	95	-69	June 14	Aug. 7	10.52	46.3	110
Fort Simpson.....	-15.8	62.0	97	-69	June 4	Aug. 28	12.92	47.9	97
Hay River.....	-12.2	59.8	96	-62	June 10	Sept. 8	12.59	53.3	99
Barrens—									
Baker Lake.....	-27.2	51.3	82	-58	June 27	Aug. 29	8.21	22.9	71
Chesterfield.....	-24.8	47.9	86	-60	June 29	Sept. 6	10.96	46.5	96
Coppermine.....	-19.4	48.7	90	-58	June 27	Aug. 20	9.57	46.6	105
Arctic Archipelago—									
Clyde.....	-16.6	40.6	71	-50	"	"	8.19	58.7	89
Eureka.....	-34.0	42.4	67	-63	June 25	Aug. 5	2.40	14.0	50
Frobisher Bay.....	-15.7	46.2	76	-49	June 28	Sept. 3	14.99	80.5	104
Mould Bay.....	-28.4	38.8	60	-63	"	"	3.17	18.7	74
Resolute.....	-26.3	40.3	65	-61	"	"	5.36	28.8	93

<sup>1</sup> Total rainfall and one tenth of the total snowfall.<sup>2</sup> Any differences noted between values given here for certain Arctic stations and those given for the same stations in the tables at pp. 64-72 result from differences in computation periods.<sup>3</sup> No appreciable period free from frost.



## THE CLIMATE OF THE CANADIAN ARCTIC\*

Early exploration of the Canadian Arctic yielded only limited information on the climate of the region. Although some of the meteorological observations were made by well-equipped scientific groups, the climatic descriptions too often publicized were by those explorers who tended to stress the dark, rigorous aspects of the environment. As a result, in the early decades of the present century the popular concept of the Arctic was a land of perpetual snow, usually stormy and always very cold. The atmospheric processes that shape its climate were often assumed to be unique to the area and independent of those affecting other parts of the hemisphere.

The groundwork for a better understanding of the climate of the Canadian Arctic was laid just prior to 1930 when several weather reporting stations were established on the shores of Hudson Bay, on Baffin Island and along the mainland Arctic Coast. Most of these are considered to be Arctic locations since they are generally north of the tree-line, a limit that is frequently used to define the boundary of the Arctic. North of this well-marked natural boundary line, which runs southeastward from the Mackenzie Delta to the shore of Hudson Bay near Churchill and then eastward over northern Ungava-Labrador, the growing season is too short and too cold to permit tree growth.

Reports from these southern Arctic sites emphasized the dependence of weather in middle latitudes on conditions in the Arctic. The full extent of this relationship could not be investigated, however, until the late 1940s, when weather stations, reporting both surface and upper-air observations, were established in the polar basin on five of the Queen Elizabeth Islands. The weather picture was further clarified after 1955 when regular reports became available from two or three scientific stations on ice islands located in the Arctic Ocean and at the Distant Early Warning Line of radar stations extending along the Arctic Coast from Alaska to Baffin Island. As a result of continuous observations from this expanding network of stations, there has been a great increase in knowledge of the climate of the Arctic and the atmospheric processes that control it. The more important features are discussed below and climatic tables for many of the individual stations are added to facilitate comparison over a standard ten-year period (1951-60). For purposes of climatic comparison it would be advantageous to divide the Canadian Arctic into a number of regions, each with homogeneous climatic features, but the wide spacing of weather reporting stations and their predominantly coastal locations preclude such an approach at this time.

### Climatic Controls

To understand the climate of the Canadian Arctic one must consider to what extent the basic controls of temperate zone climate, such as distance from the equator, the major features of the atmospheric circulation, continental and maritime influences, and the nature of the land surface apply to the Arctic regions. Of these, the far north location is of prime importance, since it is responsible not only for the extreme annual range of daylight but also for the low angle at which the sun's rays strike the earth. The absence of incoming radiation from the sun during the long Arctic night results in sustained cooling of the snow and ice surfaces of the region. After a period of two or three months when the sun rises and sets in a normal 24-hour cycle, there is a period of continuous daylight. At this time, the amount of solar radiation reaching the atmosphere over the Arctic tundra and ice-filled seas is greater than that in southern latitudes but owing to the high reflectivity of the surface only a small percentage of the heat energy remains to heat the earth and the Arctic atmosphere. Snow and ice surfaces and cloud layers, for example, reflect more than 50 p.c. of the incident radiation. Thus, not only is there an extremely large annual range of incoming radiation from the sun but the solar energy received in the course of the year is much less than at lower latitudes. The Arctic regions in fact lose more heat to space than is received from the sun.

\* Prepared by H. A. Thompson, Meteorological Branch, Department of Transport, Toronto.

To make up the annual deficit, heat must be transported into the region and this usually takes place in the upper levels of the Arctic atmosphere. In contrast to this little-publicized transfer of warm air into the Arctic, the compensating sporadic outbreaks of surplus cold air from the Polar regions are well known, especially to persons living in the temperate zone. The southward penetration of the cold air masses into the continent varies, of course, with the season. The advance is not along a broad, continent-wide front, but instead wave-like bulges form along the leading edge, which cause the cold air to surge southward in one area while it retreats northward in another. Deep low pressure areas frequently develop from the waves, spreading clouds and precipitation ahead of them as they move across the country.

For almost eight months of the year, cold air from the Arctic covers all of Northern Canada and large areas of Central Canada. Low pressure areas which form along its southern perimeter travel across the continent under the influence of the mid-latitude belt of prevailing "westerlies" and generally remain well outside the Arctic boundaries. Strong temperature contrasts between land and water in the Baffin Bay area make this a region of frequent cyclonic activity. Although low pressure areas periodically penetrate the Arctic, the usual circulation during the November-to-May period is anticyclonic. Normally a high pressure area persists over the Mackenzie River basin and the western islands of the Canadian Arctic Archipelago during January, then advances eastward to cover the Arctic islands and the "barrens" west of Hudson Bay in April. To the east of this high pressure area, the well-known Icelandic Low and its North American offshoot, the Baffin Bay Trough, maintain a general northwest-to-southeast circulation pattern. Variations in the strength of these northwesterly winds have a most significant effect on the climate of the eastern Arctic during this period.

Although May is a month of continuous daylight in most areas of the Arctic, climatically the atmospheric circulation patterns are still those of the Arctic night. June usually marks the start of a completely changed weather regime, which continues until cold, wintry conditions return to the region in September. The main features of the average circulation during the June-to-August period are the weak low pressure area over the Arctic Ocean, reflecting the alternating influences of low and high pressure areas, and the more prominent low at the south end of Baffin Island, a recognized area of high cyclonic frequency. Even in this period the majority of depressions cross Canada south of the Arctic limits but their influences are frequently felt in the Arctic region, particularly in the Davis Strait-Baffin Bay area. Some low pressure areas move through the Arctic as well, either along the mainland coast of Canada or from the Arctic seas.

While the atmospheric circulation pattern is mainly responsible for the year-to-year variations that occur in Arctic climate, the land and water distribution and relief of the land serve to create characteristic differences in climate from one location to another. The Arctic seas, including the countless channels that surround all islands north of the Canadian mainland, and Hudson Bay make up more than half of the Arctic area and have a dominant influence on the climate of the adjoining lands. The influence is especially marked during the July-to-November period when there is considerable open water in the Arctic waterways but it is scarcely noticeable during the remainder of the year when, except for some well-known local areas of open water, the surfaces are completely ice- and snow-covered. During the "open water" season, maritime influences are, of course, much greater along all coastlines and over the smaller islands than in the interiors of such large land areas as Baffin, Ellesmere or Victoria Islands, or on the Arctic mainland.

Only the most easterly of the islands of the Canadian Arctic Archipelago are predominantly mountainous. The high, ice-capped mountain ranges, which rise along the eastern coastlines of Baffin, Devon and Ellesmere Islands, present a barrier to the entry of mild, moist air from the North Atlantic. The rugged relief of these islands causes locally increased precipitation, mostly along the eastern coastlines. For example, the

heaviest snowfall in the Canadian Arctic occurs at the south end of Baffin Island, where frequent southeasterly winds release their moisture as they are forced to rise over the coastal cliffs. In all other sections of the Arctic, where the rolling hills and plains are generally below 1,500 feet in elevation, the relief is locally important as far as winds and temperatures are concerned but it has little effect on the regional climate.

### General Climate

For more than half of the year the snow- and ice-covered Arctic region is subjected to a "continental" type climate which is modified somewhat by the relatively warm waters beneath the ice. Temperatures average from  $-20^{\circ}\text{F}$  in southern sections to  $-30^{\circ}\text{F}$  in the north during three of the coldest months, generally remain below zero during the whole period, and seldom rise above freezing from October to May. Record low temperatures of  $-55^{\circ}\text{F}$  to  $-60^{\circ}\text{F}$  at most Arctic stations are not as low as the North American record of  $-81^{\circ}\text{F}$  reported at Snag in the Yukon, or even the  $-70^{\circ}\text{F}$  to  $-75^{\circ}\text{F}$  temperatures that have been reported at a few northern locations in the western provinces and Ontario. While eastern sections of the Arctic, in particular, may be subjected to substantial variations in temperature from year to year, large rapid temperature fluctuations during a particular month or season are uncommon. During this season of continuous ice-cover in the seas and channels, the Arctic is relatively cloud-free. Although low pressure areas occasionally cross the region, the cold air is too dry to permit formation of effective snow-producing clouds and, as a consequence, snowfall is very light. The scarcity of Arctic snowfall may be emphasized by comparing annual snowfall totals at Arctic stations with similar figures for cities in Southern Canada. At the Arctic locations of Isachsen, Resolute, Cambridge Bay and Baker Lake, for example, annual snowfall amounts to less than 30 inches, and these figures represent the total precipitation for fully nine months of the year, while the cities of Edmonton, Calgary, Winnipeg and Toronto receive just under 60 inches of snow, most of which falls in less than six months. Although the steady Arctic cold and light snowfall are characteristic features of the winter climate, it is only when they occur in combination with strong winds that travel becomes hazardous or, in the case of heavy blowing snow, even impossible. The most uncomfortable area and the region where blizzards are most frequent is not the high Arctic, but the coastal sections of the eastern Arctic and the barren lands surrounding Hudson Bay, where cyclonic activity is greater and strong winds more frequent than elsewhere in the Arctic.

In June, July and August, low-lying stratus clouds and coastal fogs are notorious features of the climate. During these months all land areas are snow-free, with the exception of the permanently ice-capped mountains which form the eastern boundary of the Canadian Arctic Archipelago, and the waterways lose much of their ice cover. The majority of the land areas are frozen swamps which melt to shallow depths during this period, giving the impression that the Arctic is a very wet region. Precipitation figures do not, of course, bear this out. Rainfall makes up less than half the annual precipitation and averages from one to two inches over the northern islands to three inches along the mainland coast and to seven inches at the southern end of Baffin Island. Arctic rainfall depends mostly on the extent of cyclonic activity during this three-month period and, as this varies greatly from year to year, so also does the rainfall. The water-logged lands and cold, partially ice-covered waterways influence the climate by adding sufficient moisture to create extensive low-lying clouds and fog banks, while holding air temperatures to within a few degrees of the melting point. These months, the mildest of the year, are characterized by a uniform temperature pattern along the coasts, with temperatures generally remaining below  $45^{\circ}\text{F}$  and only occasionally, during brief interludes of sunny weather, exceeding  $65^{\circ}\text{F}$ .

It will be appreciated that the four seasons concept (winter, spring, summer and autumn), so familiar to residents of southern latitudes of Canada, cannot be readily applied to Arctic climates. If, for example, spring is considered to date from the vernal equinox,



then some of the coldest weather of the year occurs in spring. If, on the other hand, it pertains to the start of the thawing season, then spring does not arrive until late May or early June, in which case three seasons, spring, summer and autumn, must be crowded into a three- or four-month period ending with the return of winter in September. In an attempt to provide a more detailed picture of the Arctic climate on a year-round basis, without resorting to rather unsatisfactory seasonal classifications, the year has been divided into four periods for discussion purposes, each period having its own characteristic climatic features.

**The Climate—December to April.**—By December the high Arctic is a region of darkness, the southern islands receive only a few hours of twilight at most and, even in the Hudson Bay area, four or five hours of mid-day sun do little to replenish the heat lost during long hours of darkness. This should not imply complete darkness during the Arctic night of course, since a great deal of useful light results from the moonlight and its reflection from the snow-covered landscape. Equally important to the climate of the area is the fact that the open bays and channels which supplied so much moisture to the air during the preceding four or five months have become mostly ice covered. Maximum sea-ice normally occurs in March, at which time the only significant areas of open water are to be found in Hudson Strait, northern Baffin Bay, Lancaster Sound and narrow coastal leads along the outer islands of the Archipelago.

*Air Temperature.*—Continuous radiational cooling from the snow-covered surfaces causes slowly falling temperatures until late in February, when the sun's rays provide enough warmth to reverse the temperature trend. Although February is the most severe month at high Arctic stations, with March rather than January a close second, the sun's rays are effective at an earlier date over the southern islands and Arctic mainland, where January is usually the coldest month.

Arctic temperatures average well below zero for the months of December through March and, over islands of the Queen Elizabeth group, during April as well. The year's coldest weather may occur at any time during these months. Obviously the Arctic does not earn its reputation as the coldest area in Canada from the extremes of low temperature reported at its stations. If only extremes of minimum temperature are considered, several areas of Canada well south of the Arctic limits are colder. Only one Arctic station in two has a record low temperature colder than  $-60^{\circ}\text{F}$ , and several have never reported temperatures as low as  $-50^{\circ}\text{F}$ . These temperature extremes reflect the moderating influences of relatively warm water beneath the ice-covered channels. At inland locations in the larger islands well removed from the open or ice-covered seas, lower temperatures would be expected.

On a monthly or yearly basis, the Arctic regions are the coldest in Canada. This feature is best illustrated by referring to the average daily temperature chart for January, which is broadly representative of temperature patterns in December, February and, in the high Arctic, March. In the southern Arctic, average temperatures in March are about  $10^{\circ}\text{F}$  higher than those in February. The important features of the temperature pattern are the very cold average temperatures ( $-30^{\circ}\text{F}$  to  $-35^{\circ}\text{F}$ ) over northern Ellesmere Island and adjacent smaller islands, and slightly higher ( $-25^{\circ}\text{F}$ ) readings in all other ice-bound areas of the Arctic region. While temperatures  $10^{\circ}\text{F}$  to  $15^{\circ}\text{F}$  higher along the Arctic's eastern margins reflect the moderating influences of open water in Lancaster Sound and northern Baffin Bay, the highest average temperatures ( $0^{\circ}\text{F}$  to  $-5^{\circ}\text{F}$ ) are found at the entrance to Hudson Strait. This relatively small area, at the southern end of Baffin Island, is dominated by open water and frequent cyclonic activity throughout the period, and its climate differs greatly from that over the remainder of the Arctic region. The severity of the climate of the Arctic is revealed when mean January temperatures of  $-33^{\circ}\text{F}$  at Eureka,  $-25^{\circ}\text{F}$  at Resolute and  $-27^{\circ}\text{F}$  at Baker Lake are compared with the average temperature of  $-19^{\circ}\text{F}$  at Snag, the station in the Yukon that boasts the lowest

recorded temperature in Canada. Mean daily temperatures for March of  $-36^{\circ}\text{F}$  at Eureka,  $-25^{\circ}\text{F}$  at Resolute and  $-15^{\circ}\text{F}$  at Baker Lake are indicative of the great length of the period of severe cold at Arctic stations.

The frequencies of occurrence of low temperatures at these stations provide further evidence of the coldness of the Arctic. During the four coldest months—December, January, February and March—temperatures may be expected to drop as low as  $-10^{\circ}\text{F}$  on 85 to 100 p.c. of the days,  $-20^{\circ}\text{F}$  on 70 to 95 p.c. of the days and  $-30^{\circ}\text{F}$  on 30 to 90 p.c. of the days (the lower frequencies apply to southern sections of the Arctic and the higher values to the northern islands of the Archipelago). Readings of  $-50^{\circ}\text{F}$  are about as frequent at stations in the high Arctic as in the recognized cold spots of the Yukon in December and January but are considerably more frequent in February and March. At the high Arctic stations of Eureka and Isachsen the longest uninterrupted spells with temperatures  $-50^{\circ}\text{F}$  or lower, during the decade 1951-60, were four and five days respectively. On one occasion, temperatures remained below  $-40^{\circ}\text{F}$  at Eureka during ten consecutive days. Several northern Arctic stations have failed to record temperatures higher than  $-30^{\circ}\text{F}$  for periods up to 22 consecutive days.

Sheltered interior locations on the larger islands are subject to greater cooling than are the coastal sites of the weather stations. This is substantiated by the temperature reports from inland Lake Hazen at the north end of Ellesmere Island. During the only winter for which data are available, temperatures were consistently lower at this location than at the nearby stations of Eureka and Alert.

These statistics suggest that even brief warming trends are unlikely during this period. Although temperatures rarely rise above the freezing point north of the Arctic Circle, a favourable alignment of low pressure areas off the east coast may occasionally permit mild Atlantic air to penetrate the eastern sections of the region.

The familiar day-to-night temperature fluctuations of Southern Canada are most evident during April in the Arctic. For the remainder of the period variations during the calendar day are caused by changes in cloud cover or wind speed. Temperatures rise when clouds spread over the Arctic skies or when winds strengthen, and fall when the winds decrease or skies clear. Such random variations during the 24 hours are of the order of 8 to 12 degrees at high Arctic sites and 15 to 20 degrees at southern locations.

*Degree-Days.*—Monthly and annual totals of degree-days below  $65^{\circ}\text{F}$  (heating degree-days) are often used in Southern Canada for predicting fuel requirements for heating buildings, and degree-days below  $32^{\circ}\text{F}$  (freezing degree-days) permit estimates of frost penetration in soils and ice formation in lakes and the sea. Since cumulative degree-day values give an indication of the severity of the climate as well as the duration of cold weather, they may also be used to compare temperature regimes of the Arctic and Southern Canada. Reference to the climatic tables (pp. 64-72) reveals that annual heating degree-day totals at most Arctic stations, with the exception of locations at the south end of Baffin Island, average over 20,000, more than twice the 10,000 heating degree-days at Edmonton and Winnipeg and almost four times the 5,500 heating degree-days during a year at Vancouver. Freezing degree-days decrease from 12,000 over the Queen Elizabeth Islands to 6,000 along the shores of Hudson Strait, in striking contrast to 500 freezing degree-days in a winter at Toronto and 1,500 at Montreal.

*Snowfall.*—Throughout the December–April period the frigid Arctic atmosphere contains so little moisture that the few disturbances venturing this far north produce only thin, diffuse clouds and consequently very light snowfall. Average cloudiness north of the Arctic Circle is just under 40 p.c. South of this latitude, and particularly at the entrance to Hudson Strait, average cloud cover is considerably higher (70 p.c.). Cloudy days are more frequent in those areas of the eastern Arctic influenced by open leads in the

ice-covered channels. Stations in the Arctic Archipelago report less than 10 inches during this period. There is a general north-to-south increase in monthly snowfall from one to two inches over the northern islands, to four inches along the mainland coast and nearly 10 inches at the storm-battered southeast tip of Baffin Island.

*Surface Winds.*—Attention was directed, in an earlier paragraph, to the prevalence of northwesterly winds during the period December to April in all but the extreme western sections of the Archipelago. Although the average circulation is northwesterly, with 40 to 70 p.c. of the winds from this quadrant, winds are so dependent on local topography that considerable variations do exist, often between sites only a few miles apart. Sheltered inland locations experience light, variable winds, while at valley and rugged coastal strips the most frequent and strongest winds follow the valley or coastline.

A surprising feature of the wind pattern over the Archipelago during this period is the large percentage of calms reported at most stations. Calm conditions occur almost 30 p.c. of the time at Isachsen, Mould Bay, Eureka, Resolute and Frobisher Bay and 45 p.c. of the time at Alert. At these stations winds are light (under 10 miles an hour) more than half the time. At Sachs Harbour and at exposed sites on the barrens west of Hudson Bay, approximately one third of all winds fall into this category. Less than 20 p.c. of the winds are in the 20- to 29-miles-an-hour class at most stations, and less than 10 p.c. are strong winds (30 miles an hour or stronger). Over the Arctic islands average wind speeds are about 10 miles an hour although considerably higher average speeds (13–19 miles an hour) are reported from the vicinity of Hudson Bay and Hudson Strait. Hourly wind speeds have exceeded 60 to 70 miles an hour at most locations and several stations along the exposed eastern flank of Baffin Island have reported winds of 100 miles an hour.

*Wind Chill.*—With the exception of the Hudson Bay–Hudson Strait area, winds at most Arctic stations are no stronger than those at cities in Southern Canada. However, because of the low temperatures at which they occur their added chilling effects are considerable. The term “wind chill” is often used to indicate the relative severity, or human discomfort, of the combination of wind and low temperature. On the basis of wind chill, the most severe areas during the coldest month are the barrens northwest of Hudson Bay.

*Blowing Snow.*—Wind speeds are critical because, in addition to winds intensifying the feeling of cold, they are responsible for blowing snow, the major deterrent to travel during this period. As residents of the Prairie Provinces are well aware, blizzards or storms of blowing snow are not confined to the Arctic regions only. However, since Arctic snow is so fine and powdery and since the treeless plains permit a clean sweep by the wind, blowing snow may occur in the Arctic with relatively light winds and it constitutes a much greater problem than on the prairies. In the Arctic, the extent of blowing snow depends on whether the wind is related to local topography or is part of a large-scale circulation pattern. In the latter case, blowing snow conditions, with visibilities often reduced to a few yards, may cover large sections of the Arctic for periods of three or four days.

Visibility in blowing snow varies from station to station but in most cases is directly related to wind speed. Although drifting conditions may be initiated by winds of 10 to 19 miles an hour, less than 5 p.c. of the winds in this speed group give blowing snow during the period December to April. One half of the 20- to 29-miles-an-hour winds may be expected to cause blowing snow and nearly 90 p.c. of strong winds (30 miles an hour) are associated with blowing snow. In the case of strong winds more than 50 p.c. of the reported visibilities are under one half mile, and more than 80 p.c. are less than three miles.

Although visibilities at most Arctic stations are reduced to six miles nearly one third of the time during this period, values low enough (three miles) to restrict aircraft operation are reported less than 25 p.c. of the time. Blowing snow is the cause of the restricted visibility in over half the cases.



*Fog*.—"Steam fog" and "Arctic sea smoke" are the names given to the type of fog that forms when very cold air passes over areas of open water. Steam fog is often observed in the Arctic during the period October to April, but it is relatively localized and usually does not persist more than a few miles downwind from the originating leads, or areas, of open water. Ice fogs occur rather infrequently in the Canadian Arctic because of the lack of moisture in the very cold air. However, as settlements become larger and vehicular and aircraft traffic increases, sufficient moisture may be added to the air through fuel combustion to cause ice fogs at these sites.

**The Climate—May and June.**—Following the return of the sun to the Arctic skies in February, the days lengthen rapidly until, by May, most sections of the Arctic have no sunset. Temperatures start the upward climb, slowly at first in March then more rapidly in April, but above-freezing temperatures are not reached until late May or early June. Even at these late dates sharp falls in temperature to near zero are possible.

May is a month of increased cloudiness and snowfall at most stations, due in part to more numerous open-water leads in Hudson Bay and in some eastern Arctic sounds, and to the arrival of moist air from Southern Canada. Increases are noted as well in the frequencies of fog, particularly in southern sections, but as far as over-all visibilities are concerned these are offset by fewer days with blowing snow.

Temperatures are usually a few degrees above freezing through most of June and, with around-the-clock daylight, the accumulated snow of the previous nine months quickly disappears from all lowland areas. At this time, however, the ice is still fast in most bays and channels. Mild air from Southern Canada is chilled as it passes over the extensive ice surfaces, causing appreciable increases in the frequency of occurrence of low-lying clouds and fog along the coastlines. Fogs are uncommon in the interiors of the larger land masses where sunny days are about as frequent as cloudy days.

**The Climate—July and August.**—During July and August the maritime influence of the seas and channels surrounding the Arctic islands stands out as a major control of the climate. By July, break-up is well advanced over Hudson Bay and in most years the navigation season opens shortly after the middle of the month. The season is delayed two or three weeks longer in the waterways separating the southern islands of the Archipelago, and in the north most of the channels remain practically icebound. Thus, throughout the Arctic, even the warm air masses that penetrate the region from Southern Canada are subjected to the cooling effects of large surfaces of ice-cold water. Evaporation from the exposed water areas and saturated ground surfaces produces a further cooling of the air masses. At the same time the additional moisture supplied to the air permits formation of extensive low-lying cloud layers, which in turn reflect much of the incoming radiation from the sun back into space.

Mean daily temperatures are quite uniform at about 40°F over the whole range of Arctic latitudes and exceed this value only over the larger southern islands and the Arctic mainland. Comparable July values for cities in Southern Canada are: Vancouver 64°F, Winnipeg 68°F and Montreal 71°F. At coastal locations temperatures may be expected to drop to within a few degrees of the freezing point whenever onshore winds occur, although when winds are off the land 45°F to 50°F readings are more likely. Temperatures have reached 90°F at such mainland settlements as Aklavik, Coppermine and Fort Chimo. Over the islands of the Archipelago, however, extreme maximum temperatures are not as high and range from 75°F in the south to mid-60° readings in the north.

With the exception of the southeastern Baffin Island-Hudson Strait area, where small amounts of rain or freezing rain may occur in almost any month, rainfall over the Canadian

Arctic is generally confined to the months June to September. July and August are usually the wettest months of the year with monthly rainfall totals of two inches in southern sections, decreasing northward to less than one inch over the Queen Elizabeth Islands. Snow may occur in either of these months but in most lowland areas falls are light. Although precipitation is closely related to cyclonic activity, topography is particularly important in the eastern Arctic. Windward slopes have considerably more cloudiness and precipitation than lee areas. Cumulus clouds occur in inland areas but only rarely reach the thunderstorm stage.

Despite the fact that average rainfall amounts are low, heavy rains have been reported at many Arctic locations. Several stations measured one-day rainfall of more than one inch in August 1960. In the barren, permanently frozen areas of the Arctic, rainfall of this intensity may lead to locally severe run-off, particularly in rolling or mountainous terrain.

Since aviation plays such a prominent role in Arctic development, the banks of low clouds and fog which frequent the coastlines and threaten the airports have a special significance. Stations along Hudson Strait have the greatest number of days with fog at this time, with Resolution Island reporting fog on one of every two days. At most Arctic stations, with the exception of mainland and sheltered island locations, fogs usually occur on six to eight days of each of these months. At Resolute, Mould Bay and Isachsen and at most other coastal stations, cloud ceilings are below 1,000 feet and/or visibilities below three miles about 30 p.c. of the time during this period.

**The Climate—September to November.**—Dwindling hours of daylight in September give notice of the imminent return of cold weather to the Arctic. Over the Queen Elizabeth Islands, mean daily temperatures are below 32°F by the beginning of September and by the end of the month temperatures throughout the Arctic are below freezing. Below zero readings prevail in northern sections by mid-October and in all areas except the shorelines of Hudson Strait by mid-November. Extreme minimum temperatures as low as -15°F have been reported in September at the high Arctic stations of Alert, Isachsen and Mould Bay. More southerly Arctic locations do not have such low values until October.

This period is the stormiest of the year in the Arctic. Low pressure areas continue to move through the region but each is followed by a progressively colder outbreak of air from the Polar seas. The greater portion of the 20-to-50-inch annual snowfall occurs during these months. Turbulence and rather severe icing may be encountered by aircraft flying in the low-lying clouds. While fogs are less frequent than in July or August, visibilities are lowered appreciably in snow storms. As ice-cover increases in the seas and bays and open water is no longer a major cloud-producing factor, the region takes on the very cold, relatively clear climate generally associated with the Arctic night. Freeze-over of most of the northern waterways is usually accomplished by November but in the southern Arctic open water has considerable influence until December.

During this period, air operations and, to a lesser extent, ground travel are frequently hampered by the "Arctic white-out", a condition that occurs when diffuse white clouds blend, without a recognizable horizon, into the shadowless, snow-covered landscape. With no sharp landmarks on the horizon, judgment of distances becomes very difficult. White-outs are not confined to this period, however, as they often occur in April or May as well.

In summary, the Canadian Arctic experiences a continental climate during more than seven months, while maritime influences predominate in most areas during the remainder

of the year. Winters are long and extremely cold, and during the warmest month of the year average temperatures are below 50°F. On an annual basis, the region is much colder than any other part of Canada and precipitation totals are very low.

### Climatic Tables

The following tables contain climatic data for those stations in the Canadian Arctic that were in operation during the full decade 1951-60. They consist primarily of monthly temperature, precipitation and wind data.\* Statistics are not included for DEW Line observing sites since they have only a short period of record within the 1951-60 decade. For the same reason, short-period climatic data obtained by recent research expeditions to the Barnes Ice-Cap on Baffin Island, Lake Hazen and the Gilman Glacier on Ellesmere Island, Devon Island, Axel Heiberg Island, Meighen Island and Ward Hunt Island are not listed.

#### AIR TEMPERATURE

All temperatures are given in degrees Fahrenheit. To obtain representative and comparable observations, all stations are equipped with standard louvered shelters in which self-registering mercury maximum and spirit minimum thermometers are housed. The mean air temperature data have been derived mainly from records for the decade 1951-60. The "highest recorded" and "lowest recorded" temperatures refer to the absolute extremes for the entire period of observation at each station.

#### PRECIPITATION

Rainfall and precipitation averages are given in hundredths of inches; mean snowfall amounts are listed in tenths of inches; precipitation is the sum of rainfall plus the water equivalent (one tenth) of the snowfall.

#### WIND

Wind data have been obtained from anemometers with continuously recording anemographs. The most prevalent directions and average wind speeds have been derived from the hourly wind data.

#### HEATING FACTOR (DEGREE-DAYS)

Below 65°F—one degree-day results for each degree that the mean daily temperature is below the base of 65°F.

### References and Source Material

The Meteorological Branch of the Department of Transport, Toronto, prepares and issues the regular series of current climatic data publications listed below. Also listed are publications containing detailed information on regional climates of Northern Canada.

Regular publications of the Meteorological Branch: *Canadian Weather Review* (monthly); *Arctic Summary* (semi-annual); *Monthly Record of Meteorological Observations in Canada*.

BOUGHNER, C. C. and THOMAS, M. K. *The Climate of Canada*. Canada Year Book 1959 and 1960. Ottawa, Queen's Printer, 1960. 74 p.

KENDREW, W. G. and CURRIE, B. W. *The Climate of Central Canada*. Ottawa, Queen's Printer, 1955. 194 p.

KENDREW, W. G. and KERR, D. *The Climate of British Columbia and the Yukon Territory*. Ottawa, Queen's Printer, 1955. 222 p.

RAE, R. W. *Climate of the Canadian Arctic Archipelago*. Toronto, Canada Department of Transport, Meteorological Branch, 1951. 90 p.

THOMAS, M. K. *Climatological Atlas of Canada*. National Research Council, Division of Building Research, and Canada Department of Transport, Meteorological Branch. Ottawa, 1953. 253 p.

\* In a reprint of this article, available from the Meteorological Branch, Department of Transport, 315 Bloor St. West, Toronto 5, Ont., additional data are given in the climatic tables, including mean monthly maximum and minimum temperatures, percentage frequency of days with minimum temperatures at or below -10°F to -50°F, cloud amounts, etc.



## Climatic Data for Stations in the Canadian Arctic

AKLAVIK

Latitude 68°14'N—Longitude 135°00'W—Altitude above M.S.L. 30 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Recorded	Lowest Recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan....	-21.7	-14.7	-28.6	44	-59	0	4.3	0.43	0.43	S	6.0	2,632
Feb....	-18.9	-11.7	-26.1	49	-62	0	2.8	0.28	0.34	S	5.6	2,336
Mar....	-9.1	-0.1	-18.0	49	-56	0	4.1	0.41	0.25	NW	6.5	2,282
Apr....	9.2	18.7	-0.3	57	-44	1	2.6	0.26	0.18	N	7.4	1,674
May....	30.0	37.8	22.1	77	-14	0.03	1.5	0.18	0.21	N	7.3	1,063
June....	48.6	56.9	40.3	86	20	0.43	0.5	0.48	0.38	N	7.8	483
July....	56.6	64.4	48.8	93	30	1.04	2	1.04	0.97	NW	7.0	273
Aug....	52.4	59.3	45.5	88	25	1.10	0.1	1.11	0.62	NW	7.0	459
Sept....	38.9	43.8	33.9	76	12	0.76	4.6	1.22	0.58	NW	7.0	807
Oct....	18.9	23.8	14.0	55	-22	0.01	11.3	1.14	0.54	NW	6.2	1,414
Nov....	-4.4	1.5	-10.3	44	-50	0	6.1	0.61	0.36	NW	5.2	2,064
Dec....	-17.7	-11.0	-24.4	46	-54	0	5.1	0.51	0.22	NW	5.7	2,530
<b>Year...</b>	<b>15.2</b>	<b>22.4</b>	<b>8.1</b>	<b>93</b>	<b>-62</b>	<b>3.37</b>	<b>43.0</b>	<b>7.67</b>	<b>0.97</b>		<b>6.6</b>	<b>18,017</b>
Period.	1951-60			1926-60		1951-60				1951-60		1930-60

<sup>1</sup> Average of less than 0.005 in.<sup>2</sup> Average of less than 0.05 in.

ALERT

Latitude 82°30'N—Longitude 62°20'W—Altitude above M.S.L. 205 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Recorded	Lowest Recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan....	-25.5	-18.2	-32.7	32	-54	1	2.2	0.22	0.11	W	5.0	2,806
Feb....	-27.4	-20.0	-34.8	30	-53	0	2.3	0.23	0.20	W	5.1	2,610
Mar....	-27.3	-19.9	-34.6	28	-54	0	2.5	0.25	0.21	W	4.6	2,861
Apr....	-11.1	-3.5	-18.7	30	-50	0	2.3	0.23	0.13	W	4.9	2,283
May....	11.7	17.6	5.8	47	-17	1	3.6	0.36	0.45	W, NW	5.1	1,652
June....	31.8	36.3	27.3	63	10	0.22	2.4	0.46	0.73	NE	6.5	996
July....	39.1	44.7	33.5	68	22	0.30	2.8	0.58	0.54	NE	7.6	803
Aug....	33.4	37.6	29.1	59	5	0.40	7.2	1.12	0.72	NE	6.0	980
Sept....	14.9	20.0	9.8	42	-15	0.01	11.6	1.17	0.55	W	6.4	1,503
Oct....	-3.7	2.7	-10.0	33	-32	1	6.3	0.63	0.80	W	6.9	1,900
Nov....	-14.5	-7.8	-21.1	31	-40	0	2.4	0.24	0.18	W	5.8	2,385
Dec....	-22.4	-15.3	-29.4	17	-51	0	2.8	0.28	0.25	W	4.6	2,709
<b>Year...</b>	<b>-0.1</b>	<b>6.2</b>	<b>-6.3</b>	<b>68</b>	<b>-54</b>	<b>0.93</b>	<b>48.4</b>	<b>5.77</b>	<b>0.80</b>		<b>5.7</b>	<b>23,488</b>
Period.	1951-60			1950-60		1951-60				1951-60		1951-60

<sup>1</sup> Average of less than 0.005 in.

## Climatic Data for Stations in the Canadian Arctic

ARCTIC BAY

Latitude 73°00'N—Longitude 85°18'W—Altitude above M.S.L. 36 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Re-recorded	Lowest Re-recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan....	-21.9	-15.0	-28.7	40	-52	<sup>1</sup>	2.4	0.24	0.20	..	..	2,678
Feb....	-25.2	-18.2	-32.1	36	-57	0	2.0	0.20	0.18	..	..	2,562
Mar....	-19.7	-11.4	-27.9	34	-49	0	2.1	0.21	0.29	..	..	2,564
Apr....	-2.2	7.1	-11.4	36	-37	0	1.6	0.16	0.32	..	..	2,055
May....	18.6	26.1	11.0	51	-15	<sup>1</sup>	2.9	0.29	0.22	..	..	1,426
June....	36.1	41.8	30.3	63	11	0.23	1.6	0.39	1.03	..	..	870
July....	42.4	49.5	35.3	75	22	0.78	0.1	0.79	0.62	..	..	682
Aug....	40.7	46.4	35.0	65	24	0.70	0.2	0.72	0.54	..	..	744
Sept....	29.8	33.8	25.7	56	5	0.38	5.1	0.89	0.94	..	..	1,062
Oct....	11.8	17.0	6.5	44	-26	<sup>1</sup>	6.0	0.60	0.73	..	..	1,606
Nov....	-9.2	-3.0	-15.4	36	-42	0	2.4	0.24	0.15	..	..	2,142
Dec....	-18.8	-12.1	-25.5	34	-50	0	1.8	0.18	0.12	..	..	2,542
<b>Year...</b>	<b>6.9</b>	<b>13.5</b>	<b>0.2</b>	<b>75</b>	<b>-57</b>	<b>2.09</b>	<b>28.2</b>	<b>4.91</b>	<b>1.03</b>		<b>..</b>	<b>20,933</b>
Period.	1951-60			1937-60		1951-60						1937-60

<sup>1</sup> Average of less than 0.005 in.

BAKER LAKE

Latitude 64°18'N—Longitude 96°00'W—Altitude above M.S.L. 41 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Re-recorded	Lowest Re-recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan....	-27.2	-20.9	-33.5	12	-57	0	1.9	0.19	0.10	NW	14.6	2,858
Feb....	-27.0	-20.6	-33.3	16	-58	0	1.7	0.17	0.13	NW	14.1	2,599
Mar....	-15.4	-8.1	-22.6	30	-58	0	2.2	0.22	0.18	N	13.5	2,492
Apr....	2.5	10.7	-5.7	39	-33	<sup>1</sup>	3.7	0.37	0.18	N	14.1	1,875
May....	21.5	27.5	15.5	49	-15	0.15	1.8	0.33	0.42	N	14.2	1,349
June....	39.0	45.6	32.3	74	8	0.79	0.3	0.82	0.56	N	12.0	780
July....	51.3	60.2	42.4	80	29	1.58	0	1.58	1.41	N	11.3	425
Aug....	50.0	57.4	42.6	82	28	1.77	0	1.77	0.83	N	12.7	465
Sept....	37.1	42.1	32.0	68	16	1.26	0.9	1.35	1.01	NW	13.6	837
Oct....	18.5	23.9	13.0	49	-19	0.37	4.1	0.78	1.26	N	15.0	1,442
Nov....	-4.0	2.7	-10.7	36	-40	0	3.5	0.35	0.34	N	14.6	2,070
Dec....	-18.8	-12.3	-25.3	24	-50	0	2.8	0.28	0.19	N	14.8	2,598
<b>Year...</b>	<b>10.6</b>	<b>17.3</b>	<b>3.9</b>	<b>82</b>	<b>-58</b>	<b>5.92</b>	<b>22.9</b>	<b>8.21</b>	<b>1.41</b>		<b>13.7</b>	<b>19,790</b>
Period.	1951-60			1946-60		1951-60				1951-60		1951-60

<sup>1</sup> Average of less than 0.005 in.

## Climatic Data for Stations in the Canadian Arctic

CAMBRIDGE BAY

Latitude 69°07'N—Longitude 105°01'W—Altitude above M.S.L. 47 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Recorded	Lowest Recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan....	-27.4	-20.8	-33.9	21	-63	0	2.8	0.28	0.22	W	12.3	2,846
Feb....	-31.4	-26.5	-36.3	11	-59	0	1.7	0.17	0.22	W	10.7	2,684
Mar....	-23.9	-17.1	-30.6	21	-52	0	2.2	0.22	0.23	W	10.6	2,675
Apr....	-6.2	2.0	-14.4	43	-42	<sup>1</sup>	1.8	0.18	0.12	N, NW	12.3	2,157
May....	15.2	21.7	8.7	45	-31	0.02	2.4	0.26	0.21	NW	12.7	1,541
June....	34.9	40.0	29.8	72	6	0.41	2.6	0.67	0.61	N	12.9	897
July....	46.2	53.4	39.0	75	30	0.80	0.1	0.81	0.80	N	12.9	561
Aug....	44.8	50.6	38.9	76	26	0.93	<sup>2</sup>	0.93	0.97	E	12.8	642
Sept....	32.0	35.8	28.1	60	7	0.32	2.9	0.61	0.41	E, NW	13.4	999
Oct....	11.8	17.6	5.9	39	-25	0.03	4.2	0.45	0.37	NW	14.0	1,652
Nov....	-12.0	-5.7	-18.3	27	-44	<sup>1</sup>	3.3	0.33	0.17	W	12.0	2,277
Dec....	-22.2	-16.1	-28.3	18	-57	0	2.4	0.24	0.16	W	10.8	2,697
Year...	5.2	11.2	-0.9	76	-63	2.51	26.4	5.15	0.97		12.3	21,628
Period.	1951-60			1935-60		1951-60				1951-60		1935-60

<sup>1</sup> Average of less than 0.005 in.<sup>2</sup> Average of less than 0.05 in.

CHESTERFIELD

Latitude 63°20'N—Longitude 90°43'W—Altitude above M.S.L. 21 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Recorded	Lowest Recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan....	-24.4	-17.5	-31.3	31	-60	0	2.9	0.29	0.40	N	15.3	2,784
Feb....	-25.0	-18.4	-31.6	31	-57	0	1.9	0.19	0.15	N	14.2	2,559
Mar....	-12.1	-4.2	-19.9	30	-52	0	2.9	0.29	0.33	N	12.9	2,440
Apr....	3.5	12.4	-5.5	42	-38	0	4.2	0.42	0.30	N	13.2	1,878
May....	22.3	27.8	16.7	45	-17	0.13	2.8	0.41	0.44	N	14.9	1,361
June....	37.2	42.9	31.5	81	5	0.88	0.8	0.96	0.76	N	11.8	849
July....	47.7	55.4	39.9	84	26	1.64	0	1.64	0.85	N	11.7	530
Aug....	47.8	53.8	41.7	86	27	1.70	0	1.70	1.19	N	13.0	549
Sept....	37.1	40.9	33.2	67	9	1.53	1.3	1.66	1.33	N	15.2	840
Oct....	21.7	26.7	16.6	49	-22	0.43	5.4	0.97	0.61	N	17.1	1,345
Nov....	1.2	8.0	-5.6	49	-38	0.01	5.1	0.52	0.34	NW	14.9	1,941
Dec....	-15.5	-8.0	-23.0	24	-54	0	4.7	0.47	1.10	N	15.6	2,492
Year...	11.8	18.3	5.2	86	-60	6.32	32.0	9.52	1.33		14.2	19,568
Period.	1951-60			1921-60		1951-60				1951-60		1931-60



## Climatic Data for Stations in the Canadian Arctic

CLYDE

Latitude 70°27'N—Longitude 68°33'W—Altitude above M.S.L. 10 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Re-recorded	Lowest Re-recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan.....	-17.0	-10.1	-23.8	32	-49	1	4.3	0.43	0.73	NW	4.6	2,530
Feb.....	-20.1	-12.7	-27.5	38	-48	0	2.6	0.26	0.41	NW	7.4	2,390
Mar.....	-15.7	-7.2	-24.1	28	-45	1	2.0	0.20	0.21	NW	4.9	2,468
Apr.....	1.0	10.7	-8.8	38	-42	0	4.9	0.49	0.95	NW	4.7	1,965
May.....	20.9	28.8	13.0	48	-14	1	5.4	0.54	0.30	NW	6.4	1,389
June.....	34.6	40.5	28.6	59	10	0.08	3.2	0.40	0.30	NW	8.0	924
July.....	40.5	47.3	33.6	71	22	0.52	3.6	0.88	1.28	NW	8.5	756
Aug.....	39.3	44.7	33.8	66	22	1.16	1.5	1.31	1.47	NW	6.4	794
Sept.....	32.3	36.7	27.9	55	12	0.58	10.9	1.67	2.00	NW	8.1	984
Oct.....	20.2	25.0	15.3	42	-13	1	12.4	1.24	0.84	NW	10.3	1,383
Nov.....	-0.4	5.9	-6.7	44	-31	1	5.5	0.55	0.55	NW	7.0	1,902
Dec.....	-14.1	-7.9	-20.2	25	-47	1	1.7	0.17	0.37	NW	3.8	2,396
<b>Year...</b>	<b>10.1</b>	<b>16.8</b>	<b>3.4</b>	<b>71</b>	<b>-49</b>	<b>2.34</b>	<b>58.0</b>	<b>8.14</b>	<b>2.00</b>		<b>6.7</b>	<b>19,881</b>
<b>Period.</b>	1951-60			1942-60		1951-60				1955-56		1942-60

<sup>1</sup> Average of less than 0.005 in.

COPPERMINE

Latitude 67°49'N—Longitude 115°05'W—Altitude above M.S.L. 28 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Re-recorded	Lowest Re-recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan.....	-20.3	-13.3	-27.2	27	-54	0	2.8	0.28	0.13	SW	12.2	2,616
Feb.....	-24.8	-17.9	-31.7	34	-58	0	1.6	0.16	0.17	W	10.5	2,461
Mar.....	-15.9	-8.6	-23.1	29	-56	0	3.4	0.34	0.50	SW	9.2	2,465
Apr.....	1.1	9.9	-7.8	46	-47	0	2.7	0.27	0.30	W	8.7	1,920
May.....	22.1	28.7	15.4	74	-24	0.05	2.2	0.27	0.50	W	8.5	1,336
June.....	37.4	43.2	31.6	82	5	0.44	1.4	0.58	0.39	N	8.5	807
July.....	48.0	55.0	41.0	87	31	0.94	0.6	1.00	0.64	NE	9.6	505
Aug.....	48.0	54.4	41.6	83	27	1.76	1	1.76	1.42	NE	10.0	555
Sept.....	36.9	41.4	32.3	79	7	0.77	1.4	0.91	0.72	N	11.0	852
Oct.....	19.9	25.1	14.7	57	-28	0.11	6.6	0.77	0.42	SW	12.0	1,411
Nov.....	-4.0	2.6	-10.6	36	-42	0	5.2	0.52	0.27	W	11.0	2,067
Dec.....	-15.0	-7.8	-22.1	31	-49	0	3.7	0.37	0.33	SW	10.3	2,489
<b>Year...</b>	<b>11.1</b>	<b>17.7</b>	<b>4.5</b>	<b>87</b>	<b>-58</b>	<b>4.07</b>	<b>31.6</b>	<b>7.23</b>	<b>1.42</b>		<b>10.1</b>	<b>19,484</b>
<b>Period.</b>	1951-60			1930-60		1951-60				1951-60		1931-60

<sup>1</sup> Average of less than 0.05 in.

## Climatic Data for Stations in the Canadian Arctic

CORAL HARBOUR

Latitude 64°12'N—Longitude 83°22'W—Altitude above M.S.L. 193 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Recorded	Lowest Recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan....	-21.3	-13.9	-28.6	31	-61	0	3.4	0.34	0.25	NW	12.1	2,719
Feb....	-20.2	-12.3	-28.1	30	-55	0	3.9	0.39	0.31	N	12.3	2,438
Mar....	-9.5	-0.1	-18.8	31	-51	0	3.9	0.39	0.46	N	10.5	2,356
Apr....	5.7	14.7	-3.4	40	-39	0	4.9	0.49	0.24	N	13.1	1,839
May....	22.4	29.6	15.2	48	-19	0.10	7.5	0.85	0.89	NW	13.2	1,364
June....	36.6	42.4	30.8	67	11	0.72	3.2	1.04	0.68	N	12.3	867
July....	47.6	55.3	39.8	77	30	1.27	0.5	1.32	0.84	N	12.2	558
Aug....	45.9	52.8	39.0	79	26	1.59	<sup>1</sup>	1.59	1.08	N	12.9	598
Sept....	34.3	39.0	29.6	63	8	1.12	3.6	1.48	0.90	N	13.3	939
Oct....	17.2	23.8	10.5	41	-20	0.21	10.7	1.28	0.70	NW	13.3	1,469
Nov....	-0.2	7.5	-7.8	35	-34	0.02	6.7	0.69	0.26	N	13.2	1,899
Dec....	-14.5	-7.1	-21.8	27	-53	0	4.8	0.48	0.34	N	13.3	2,406
<b>Year...</b>	<b>12.0</b>	<b>19.3</b>	<b>4.7</b>	<b>79</b>	<b>-61</b>	<b>5.03</b>	<b>53.1</b>	<b>10.34</b>	<b>1.08</b>		<b>12.6</b>	<b>19,452</b>
Period.	1951-60			1944-60		1951-60				1951-60		1944-60

<sup>1</sup> Average of less than 0.05 in.

EUREKA

Latitude 80°00'N—Longitude 85°56'W—Altitude above M.S.L. 8 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Recorded	Lowest Recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan....	-32.7	-26.3	-39.0	30	-60	0	1.2	0.12	0.12	E	7.2	3,069
Feb....	-35.2	-29.0	-41.4	10	-62	0	0.7	0.07	0.14	E	6.6	2,856
Mar....	-35.6	-29.7	-41.4	8	-63	0	0.6	0.06	0.20	E	5.4	3,081
Apr....	-16.2	-8.5	-23.9	26	-50	0	0.7	0.07	0.15	E	5.8	2,466
May....	14.6	20.8	8.3	42	-24	0	1.1	0.11	0.22	NW	8.4	1,575
June....	36.8	41.5	32.0	64	8	0.10	0.3	0.13	0.57	NW	10.9	837
July....	42.2	47.7	36.7	67	28	0.58	0.3	0.61	0.51	NW	11.3	701
Aug....	38.8	43.2	34.4	59	17	0.47	0.6	0.53	1.64	NW	9.6	818
Sept....	19.9	24.2	15.6	42	-15	0.01	4.2	0.43	0.54	NE	7.8	1,359
Oct....	-6.8	-0.3	-13.3	39	-43	0	3.5	0.35	0.53	E	6.6	1,807
Nov....	-23.1	-16.6	-29.6	29	-48	0	0.8	0.08	0.06	E	2,625	2,625
Dec....	-31.3	-25.6	-36.9	13	-57	0	0.8	0.08	0.10	E	5.4	3,026
<b>Year...</b>	<b>-2.4</b>	<b>3.5</b>	<b>-8.2</b>	<b>67</b>	<b>-63</b>	<b>1.16</b>	<b>14.8</b>	<b>2.64</b>	<b>1.64</b>		<b>7.6</b>	<b>24,220</b>
Period.	1951-60			1947-60		1951-60				1951-60		1947-60

## Climatic Data for Stations in the Canadian Arctic

FROBISHER BAY

Latitude 63°45'N—Longitude 68°33'W—Altitude above M.S.L. 68 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Re-recorded	Lowest Re-recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan....	-14.9	-7.7	-22.1	39	-49	0.03	12.4	1.27	1.60	NW	9.1	2,502
Feb....	-12.7	-4.7	-20.6	38	-49	<sup>1</sup>	13.8	1.38	0.99	NW	9.5	2,229
Mar....	-6.1	2.5	-14.7	39	-43	<sup>1</sup>	9.4	0.94	0.94	NW	9.7	2,223
Apr....	8.3	16.9	-0.3	41	-29	0.14	8.8	1.02	0.71	NW	11.0	1,728
May....	28.0	33.7	22.3	56	-15	0.15	6.8	0.83	0.54	NW	13.4	1,197
June....	39.0	44.6	33.4	71	17	1.39	2.6	1.65	1.01	SE	11.7	795
July....	46.6	53.4	39.7	76	30	2.76	0	2.76	1.54	SE	9.7	583
Aug....	44.6	50.7	38.5	74	30	2.28	0.2	2.30	1.33	SE	8.9	639
Sept....	36.8	41.4	32.1	58	5	1.10	3.9	1.49	0.87	NW	11.5	870
Oct....	23.0	28.1	17.8	45	-6	0.19	15.0	1.69	0.74	NW	14.6	1,287
Nov....	7.2	14.1	0.3	42	-32	0.06	15.0	1.56	1.10	NW	12.3	1,656
Dec....	-7.0	0.8	-14.7	36	-44	<sup>1</sup>	11.0	1.10	0.86	NW	11.0	2,167
Year...	16.1	22.8	9.3	76	-49	8.10	98.9	17.99	1.60		11.0	17,876
Period.	1951-60			1942-60		1951-60				1951-60		1942-60

<sup>1</sup> Average of less than 0.005 in.

HOLMAN

Latitude 70°30'N—Longitude 117°38'W—Altitude above M.S.L. 30 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Re-recorded	Lowest Re-recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan....	-20.0	-14.0	-25.9	20	-45	0	2.9	0.29	0.15	E	9.1	2,610
Feb....	-25.7	-19.4	-32.0	28	-50	0	1.2	0.12	0.10	E	7.9	2,506
Mar....	-16.4	-9.8	-23.0	24	-48	0	2.1	0.21	0.25	E	9.5	2,474
Apr....	1.3	8.9	-6.3	40	-35	0	3.6	0.36	0.52	E	11.5	1,935
May....	20.9	26.5	15.3	54	-13	0.06	1.5	0.21	0.19	E	10.3	1,358
June....	39.0	44.9	33.1	71	13	0.26	0.6	0.32	0.56	E	9.5	789
July....	45.5	52.4	38.5	78	27	0.87	0.2	0.89	0.99	W	8.7	611
Aug....	44.8	50.8	38.8	75	24	0.80	0.4	0.84	0.70	E	8.9	660
Sept....	33.3	37.2	29.3	63	8	0.44	3.8	0.82	0.40	E	11.7	966
Oct....	15.8	20.5	11.0	42	-13	0.06	6.0	0.66	0.32	E	13.1	1,516
Nov....	-5.0	-0.1	-9.9	28	-38	0	3.0	0.30	0.23	E	11.6	2,067
Dec....	-15.2	-9.9	-20.4	19	-48	0	2.4	0.24	0.23	E	11.2	2,434
Year...	9.9	15.7	4.0	78	-50	2.49	27.7	5.26	0.99		10.3	19,926
Period.	1951-60			1941-60		1951-60				1951-60		1941-60



## Climatic Data for Stations in the Canadian Arctic

ISACHSEN

Latitude 78°47'N—Longitude 103°32'W—Altitude above M.S.L. 83 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Recorded	Lowest Recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan....	-30.2	-23.7	-36.7	25	-63	0	0.6	0.06	0.05	N	10.6	2,988
Feb....	-33.9	-27.8	-40.0	-5	-60	0	0.6	0.06	0.08	N	7.9	2,791
Mar....	-31.1	-24.9	-37.2	17	-65	0	0.4	0.04	0.05	N	7.0	2,948
Apr....	-11.6	-4.8	-18.4	30	-44	0	1.7	0.17	0.18	N	7.5	2,340
May....	11.3	16.5	6.1	36	-21	<sup>1</sup>	3.0	0.30	0.19	N	10.3	1,671
June....	31.6	35.4	27.7	62	6	0.01	1.2	0.13	0.10	N	9.9	1,011
July....	38.6	43.0	34.2	66	26	0.71	1.6	0.87	0.60	NW	10.9	822
Aug....	34.6	38.6	30.5	58	8	0.73	1.8	0.91	0.80	N,SW	10.0	952
Sept....	16.9	21.5	12.2	37	-17	0.10	6.1	0.71	0.78	N	9.9	1,449
Oct....	-1.9	4.5	-8.3	29	-35	0	4.0	0.40	0.39	N	11.0	1,934
Nov....	-18.8	-12.4	-25.2	25	-50	0	1.4	0.14	0.25	N	9.0	2,517
Dec....	-26.1	-19.9	-32.2	15	-60	0	0.6	0.06	0.08	N,NW	9.7	2,846
<b>Year...</b>	<b>-1.7</b>	<b>3.8</b>	<b>-7.3</b>	<b>66</b>	<b>-65</b>	<b>1.55</b>	<b>23.0</b>	<b>3.85</b>	<b>0.80</b>		<b>9.5</b>	<b>24,269</b>
Period.	1951-60			1948-60		1951-60				1951-60		1948-60

<sup>1</sup> Average of less than 0.005 in.

MOULD BAY

Latitude 76°14'N—Longitude 119°20'W—Altitude above M.S.L. 50 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Recorded	Lowest Recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan....	-27.5	-20.4	-34.6	15	-55	0	1.4	0.14	0.23	NW	10.5	2,895
Feb....	-31.7	-25.3	-38.1	13	-58	0	0.7	0.07	0.09	NW	8.6	2,735
Mar....	-26.9	-20.2	-33.6	13	-56	0	1.2	0.12	0.22	N	7.9	2,821
Apr....	-8.8	-1.1	-16.4	29	-43	0	1.3	0.13	0.15	N,NW	8.4	2,229
May....	12.6	18.0	7.2	35	-20	<sup>1</sup>	2.7	0.27	0.23	NW	11.7	1,628
June....	32.3	36.3	28.3	56	8	0.07	0.8	0.15	0.31	NW	13.0	1,002
July....	39.2	43.7	34.6	60	25	0.54	1.3	0.67	0.58	NW	12.2	812
Aug....	35.2	39.1	31.2	57	14	0.63	2.1	0.84	1.88	S,NE	11.2	933
Sept....	21.2	25.4	17.0	46	-13	0.13	2.9	0.42	0.45	NW	11.6	1,332
Oct....	1.3	7.4	-4.8	32	-33	<sup>1</sup>	3.0	0.30	0.20	NW	11.3	1,996
Nov....	-16.0	-9.5	-22.5	19	-46	0	1.0	0.10	0.06	NW	9.9	2,427
Dec....	-24.2	-18.1	-30.3	15	-63	0	1.3	0.13	0.08	NW	8.5	2,784
<b>Year...</b>	<b>0.6</b>	<b>6.3</b>	<b>-5.2</b>	<b>60</b>	<b>-63</b>	<b>1.37</b>	<b>19.7</b>	<b>3.34</b>	<b>1.88</b>		<b>12.5</b>	<b>23,594</b>
Period.	1951-60			1948-60		1951-60				1951-60		1948-60

<sup>1</sup> Average of less than 0.005 in.

## Climatic Data for Stations in the Canadian Arctic

NOTTINGHAM ISLAND

Latitude 63°07'N—Longitude 77°56'W—Altitude above M.S.L. 54 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Recorded	Lowest Recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan.....	-11.9	-5.8	-18.0	32	-33	0	4.7	0.47	0.43	NW	10.9	2,412
Feb.....	-10.5	-3.9	-17.1	32	-42	0	3.1	0.31	0.31	NW	11.5	2,201
Mar.....	-2.3	5.4	-10.0	34	-40	0	2.5	0.25	0.30	NW	9.9	2,130
Apr.....	11.3	19.0	3.6	43	-26	0	4.5	0.45	0.25	NE	11.5	1,653
May.....	26.0	31.3	20.7	47	-8	0.13	4.7	0.60	0.44	NE	11.2	1,237
June.....	36.4	42.1	30.6	65	10	0.93	2.8	1.21	1.59	NE	10.7	885
July.....	43.3	50.2	36.4	73	25	1.59	0.1	1.60	1.25	W	9.8	688
Aug.....	43.2	49.2	37.1	69	22	1.92	0	1.92	1.15	NE	11.1	698
Sept.....	35.2	39.5	30.9	61	13	1.37	5.4	1.91	2.17	NW	10.9	900
Oct.....	25.0	29.1	20.9	52	2	0.38	11.3	1.51	1.24	NW	14.5	1,218
Nov.....	12.0	17.6	6.3	40	-21	0.03	9.8	1.01	0.70	N	13.0	1,587
Dec.....	-3.3	3.2	-9.7	31	-36	0	5.5	0.55	0.60	N	11.6	2,096
<b>Year...</b>	<b>17.0</b>	<b>23.1</b>	<b>11.0</b>	<b>73</b>	<b>-42</b>	<b>6.35</b>	<b>54.4</b>	<b>11.79</b>	<b>2.17</b>		<b>11.4</b>	<b>17,705</b>
<b>Period.</b>	<b>1951-60</b>			<b>1928-60</b>		<b>1951-60</b>				<b>1951-60</b>		<b>1931-60</b>

RESOLUTE

Latitude 74°43'N—Longitude 94°59'W—Altitude above M.S.L. 209 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Recorded	Lowest Recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan.....	-25.3	-13.7	-31.8	23	-53	0	1.0	0.10	0.06	NW	11.9	2,830
Feb.....	-28.6	-22.2	-35.0	7	-57	0	1.1	0.11	0.07	E	11.5	2,678
Mar.....	-24.6	-18.2	-31.0	20	-61	0	1.0	0.10	0.09	NW	10.4	2,768
Apr.....	-7.7	-0.4	-15.0	30	-40	1	2.4	0.24	0.20	NW	10.9	2,217
May.....	13.6	19.1	8.1	40	-20	4	2.9	0.29	0.10	NW	11.6	1,597
June.....	33.0	37.2	28.8	57	8	0.30	1.5	0.45	0.77	NW	12.6	960
July.....	40.3	45.1	35.4	61	28	0.80	0.4	0.84	0.66	NW	12.1	766
Aug.....	37.3	41.4	33.2	59	17	1.22	1.1	1.33	0.99	NW	12.3	856
Sept.....	24.1	27.6	20.6	48	0	0.13	4.8	0.61	0.25	NW	12.5	1,233
Oct.....	5.7	11.2	0.1	32	-30	1	6.4	0.64	0.37	NW	12.5	1,835
Nov.....	-12.9	-6.8	-19.0	27	-43	0	2.2	0.22	0.14	NW	11.0	2,292
Dec.....	-20.8	-14.5	-27.0	17	-51	0	2.0	0.20	0.08	NW	10.4	2,641
<b>Year...</b>	<b>2.8</b>	<b>8.4</b>	<b>-2.7</b>	<b>61</b>	<b>-61</b>	<b>2.45</b>	<b>26.8</b>	<b>5.13</b>	<b>0.99</b>		<b>11.6</b>	<b>22,673</b>
<b>Period.</b>	<b>1951-60</b>			<b>1948-60</b>		<b>1951-60</b>				<b>1951-60</b>		<b>1947-60</b>

¹ Average of less than 0.005 in.

## Climatic Data for Stations in the Canadian Arctic

RESOLUTION ISLAND

Latitude 61°18'N—Longitude 64°53'W—Altitude above M.S.L. 127 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Re-recorded	Lowest Re-recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan.....	-0.4	4.7	-5.5	35	-36	0.03	5.6	0.59	0.52	W	20.5	2,021
Feb.....	1.1	6.4	-4.2	35	-32	0.01	4.0	0.41	0.20	SW	20.5	1,850
Mar.....	7.0	11.6	2.3	37	-22	0.02	3.9	0.41	0.16	W	16.1	1,817
Apr.....	16.0	20.3	11.6	39	-20	0.07	2.9	0.36	0.18	NE	16.2	1,488
May.....	27.8	31.0	24.6	45	-2	0.22	3.5	0.57	0.79	W	14.4	1,181
June.....	33.7	36.9	30.4	58	16	0.92	1.0	1.02	0.82	NE	13.2	942
July.....	37.9	42.0	33.8	59	26	1.48	0	1.48	1.51	E	12.5	843
Aug.....	37.9	41.4	34.3	61	26	1.67	0	1.67	0.86	E	13.5	831
Sept.....	35.0	37.8	32.1	60	14	1.56	2.0	1.76	1.00	W	13.9	900
Oct.....	28.9	31.8	25.9	45	-1	0.43	7.8	1.21	0.80	W	18.2	1,113
Nov.....	21.2	24.7	17.6	39	-10	0.06	10.6	1.12	0.90	W	17.9	1,311
Dec.....	9.4	13.7	5.0	35	-22	0.01	8.5	0.86	0.50	W	20.4	1,724
<b>Year...</b>	<b>21.3</b>	<b>25.2</b>	<b>17.3</b>	<b>61</b>	<b>-36</b>	<b>6.48</b>	<b>49.8</b>	<b>11.46</b>	<b>1.51</b>		<b>16.4</b>	<b>16,021</b>
Period.	1951-60			1929-60		1951-60				1951-60		1931-60

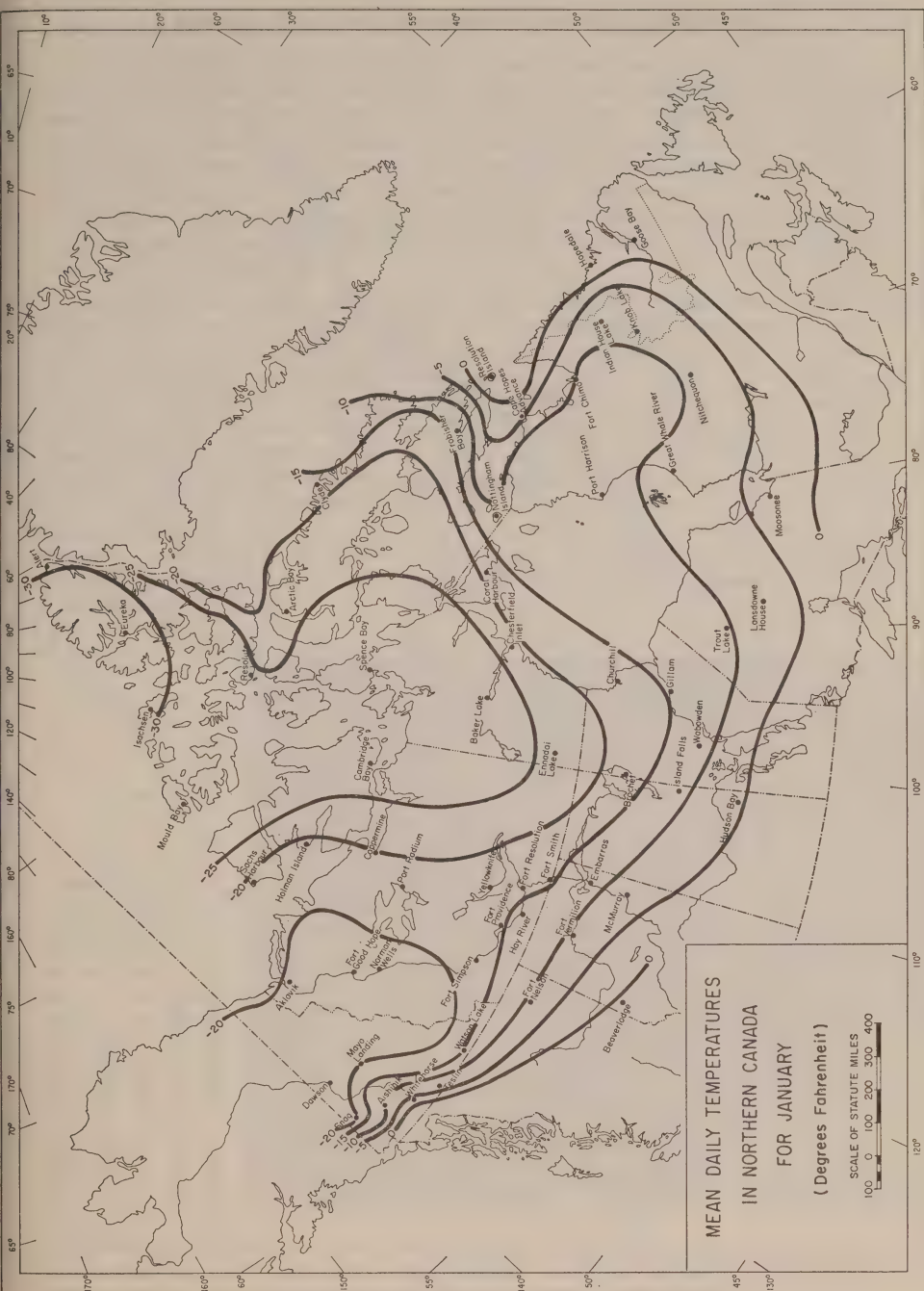
SACHS HARBOUR

Latitude 71°57'N—Longitude 124°44'W—Altitude above M.S.L. 277 feet

Month	Air Temperature					Precipitation				Wind		Heating Factor
	Mean Daily	Mean Daily Maximum	Mean Daily Minimum	Highest Re-recorded	Lowest Re-recorded	Rain	Snow	Total (Water)	Maximum Fall in 24 Hours	Most Prevalent Direction	Average Speed	Degree-Days Below 65° F
	°F	°F	°F	°F	°F	in.	in.	in.	in.		m.p.h.	No.
Jan.....	-21.8	-14.0	-29.5	23	-50	0	0.9	0.09	0.04	N	13.2	..
Feb.....	-24.7	-17.9	-31.4	21	-54	0	0.9	0.09	0.05	E	11.6	..
Mar.....	-18.8	-12.0	-25.6	14	-47	0	1.4	0.14	0.18	SE	10.7	..
Apr.....	-3.9	2.7	-10.5	36	-38	0	1.0	0.10	0.04	E, SE	13.2	..
May.....	16.3	21.8	10.8	45	-16	1	2.2	0.22	0.21	E	12.8	..
June.....	35.2	40.3	30.0	64	7	0.14	0.4	0.18	0.27	N, E	12.8	..
July.....	42.0	47.3	36.7	62	26	0.94	0.6	1.00	0.86	NW	13.1	..
Aug.....	40.2	45.0	35.4	60	21	0.56	1.1	0.67	0.60	SE	13.6	..
Sept.....	29.2	32.7	25.7	60	7	0.31	3.4	0.65	0.49	E	14.7	..
Oct.....	9.5	15.2	3.8	33	-21	0.01	4.4	0.45	0.15	E	15.2	..
Nov.....	-11.8	-5.7	-17.8	18	-34	0	1.8	0.18	0.13	E	13.0	..
Dec.....	-18.3	-11.9	-24.6	13	-50	0	1.5	0.15	0.10	E	12.0	..
<b>Year...</b>	<b>6.1</b>	<b>12.0</b>	<b>0.2</b>	<b>64</b>	<b>-54</b>	<b>1.96</b>	<b>19.6</b>	<b>3.92</b>	<b>0.86</b>		<b>13.0</b>	<b>..</b>
Period.	1955-60			1955-60		1955-60				1955-60		

<sup>1</sup> Average of less than 0.005 in.



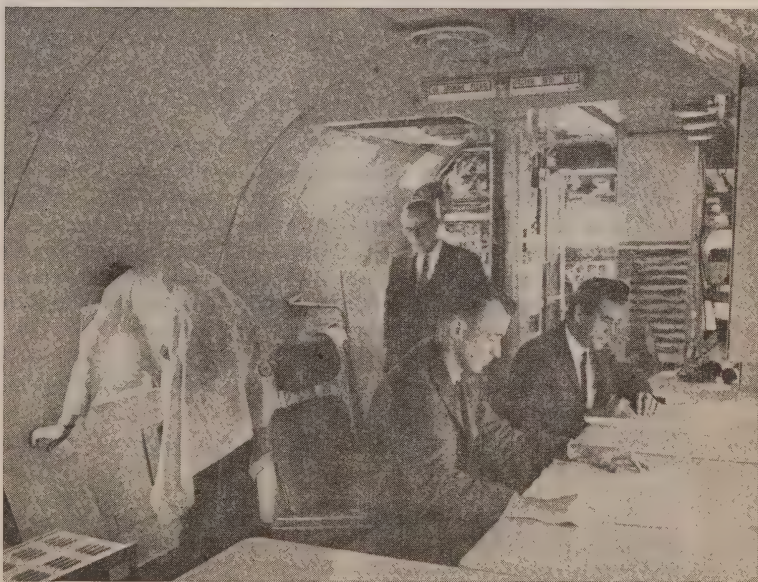




## Section 2.—Meteorological Observing Stations

In January 1966, official meteorological observations were taken and recorded at 2,313 weather reporting stations in Canada. There are several different classes of stations ranging from the first-order reporting stations at airports where hourly observations of all aspects of the weather are recorded, to the co-operative observing stations where a volunteer observer makes daily observations of rainfall, snowfall and temperature or precipitation only. While there are vast areas of the country where the weather stations are several hundred miles apart, most of the settled parts of the country are represented by first-order hourly reporting stations every 100 miles or so, and by co-operative climatological observing stations at least every 25 miles.

At most of the 274 first-order synoptic stations complete weather observations are made every six hours and at a large percentage of them only slightly less complete observations for aviation forecasts are made every hour. These weather data, including information on temperature, precipitation, pressure, wind, humidity, cloud and visibility, are sent first by radio and teletype to the different weather offices across the Continent to be used for weather forecasting purposes, and then at each month-end the manuscript reports are sent by mail to Meteorological Branch Headquarters for use in compiling climatic statistics. At 101 of these observing stations, personnel of the Telecommunications Branch of the Department of Transport take weather observations as part of their scheduled duties, and 28 stations are operated in a similar manner by the different Armed Services; 93 stations are operated by Meteorological Branch personnel and the remainder are operated under contract, or by co-operative arrangement with various transportation and communications companies.



A specially designed transport aircraft, recently placed in service by the Basic Weather Division of the Meteorological Branch, Department of Transport, is opening a new era in air reconnaissance of ice conditions in the Arctic; the aircraft, with another to be added later, will place Canada in the forefront in this field.

The Canadian project is being undertaken with a view to improving summer navigation in the Arctic, winter navigation on the St. Lawrence River and Gulf, and Great Lakes navigation during freeze-up.



Twice daily, at 34 locations throughout the country, complete upper air observations are made from the surface to altitudes upwards to 100,000 feet. Pressure, temperature and humidity measurements are determined by radiosonde instruments carried aloft by balloons and the information reported by radio to the ground receiving stations; winds are determined by observing the drift of the balloon by means of radar or radio direction finding ground equipment. There are also 30 locations where the winds in the lower layers of the atmosphere are determined by observing free balloon drift by means of a theodolite or by radar. As in the case of the first-order synoptic reporting stations, these upper air weather observations are made available immediately to forecast offices for weather forecasting purposes, and the manuscript reports are collected at Meteorological Branch Headquarters for compilation of climatic statistics.

There are 1,366 weather observing stations in Canada classified as climatological stations where the observers record temperature extremes and precipitation once or twice daily and send in monthly data sheets. Most of the observers serve on a voluntary basis and willingly spend several hours a month on their hobby. In addition, many governmental and industrial organizations such as agricultural experimental farms and power companies have incorporated brief climatological duties into the general work of some of their employees. These climatological stations have contributed much useful information on temperature and precipitation for publication by the Meteorological Branch.

There are 574 stations classified as precipitation stations where rainfall and snowfall only are observed and recorded. Since precipitation varies more rapidly than temperature over short distances, a dense network of these stations is required, especially in large urban areas. Finally, there are 99 miscellaneous stations where observations of wind, sunshine and temperature are taken for special purposes. In all, the number of weather stations in Canada has been growing at an average rate of more than 100 a year for the past decade and thus a steadily increasing climatic intelligence is assisting Canadians in all economic pursuits.

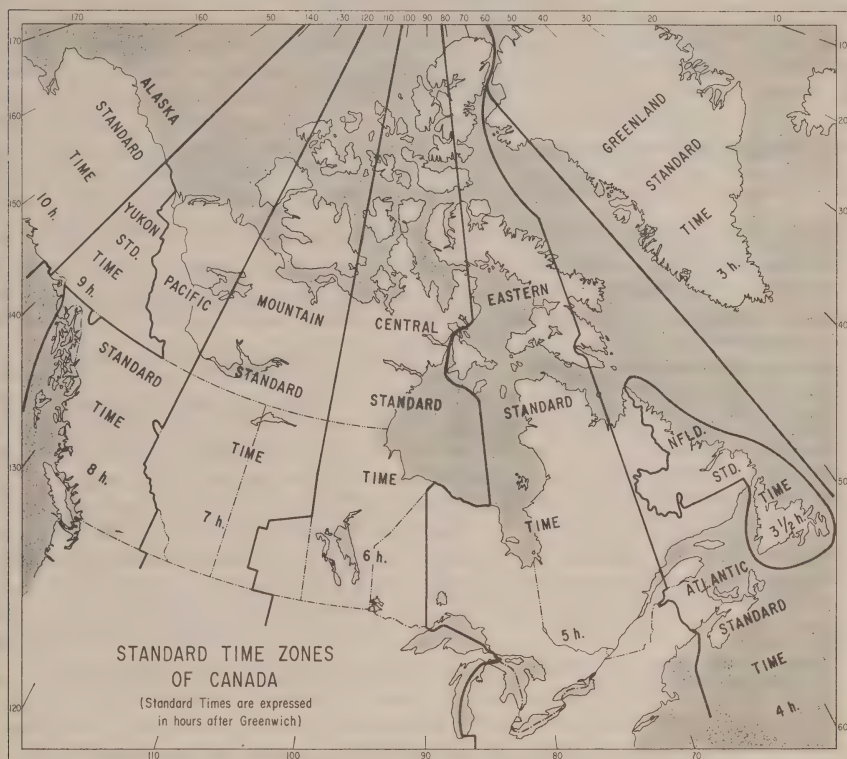
### Section 3.—Standard Time and Time Zones

Standard Time, which was adopted at a World Conference held at Washington, D.C., in 1884, sets the number of time zones in the world at 24, each zone ideally extending over one twenty-fourth of the surface of the earth and including all the territory between two meridians  $15^{\circ}$  of longitude apart. In practice, the zone boundaries are quite irregular for geographic and political reasons. Universal Time (UT) is the time of the zone centred on the zero meridian through Greenwich. Each of the other time zones is a definite number of hours ahead of or behind UT to a total of 12 hours, at which limit the international date-line runs roughly north-south through the mid-Pacific.

Canada has seven time zones, the most easterly being Newfoundland Standard Time, three hours and thirty minutes behind UT. In the west, Yukon Standard Time, which is used throughout Yukon Territory, is nine hours behind UT. In between, from east to west, the remaining zones are called Atlantic, Eastern, Central, Mountain and Pacific Standard Time.

**Legal Authority for the Time Zones.**—Time in Canada has been considered a matter of provincial rather than federal jurisdiction. Each of the provinces and the Northwest Territories has enacted laws governing the standard time to be used within its boundaries. These laws determine the location of the time zone boundaries. Lines of communication, however, have caused communities near the boundary of a time zone to adopt the time of the adjacent zone, and in most cases these changes are acknowledged by

amendments to provincial legislation. During the two World Wars, there were federal enactments concerning time but these were of temporary duration. In 1941 the Dominion Observatory time was declared the time to be used for official purposes in Canada.



**Daylight Saving Time.**—Although Daylight Saving Time had been urged in many quarters before World War I, its first use in Canada came as a federal war measure in 1918. Today most of the provinces have legislation controlling the provincial or municipal adoption (or rejection) of Daylight Saving. In the remaining provinces it is necessary to refer to the individual municipalities to determine whether, and between what dates, Daylight Saving is adopted in any particular year.

## CHAPTER II.—CONSTITUTION AND GOVERNMENT\*

### CONSPECTUS

	PAGE		PAGE
<b>Part I.—Constitution of Canada.....</b>	<b>78</b>	<b>Part III.—Administrative Functions of the Federal Government.....</b>	<b>125</b>
<b>Part II.—Machinery of Government.....</b>	<b>83</b>	<b>SECTION 1. FINANCIAL ADMINISTRATION....</b>	<b>125</b>
SECTION 1. THE FEDERAL GOVERNMENT... 83		SECTION 2. DEPARTMENTS, BOARDS, COM- MISSIONS, ETC.....	130
Subsection 1. The Executive.....	84	SECTION 3. CROWN CORPORATIONS.....	142
Subsection 2. The Legislature.....	90	SECTION 4. ACTS ADMINISTERED BY FEDERAL DEPARTMENTS.....	151
Subsection 3. The Judiciary.....	103	<b>Part IV.—Federal and Provincial Govern- ment Employment.....</b>	<b>156</b>
SECTION 2. PROVINCIAL AND TERRITORIAL GOVERNMENTS.....	105	<b>Part V.—Canada's External Relations....</b>	<b>163</b>
Subsection 1. Newfoundland.....	106	SECTION 1. DIPLOMATIC REPRESENTATION AS AT JUNE 30, 1966.....	164
Subsection 2. Prince Edward Island....	107	SECTION 2. INTERNATIONAL ACTIVITIES, 1965-66.....	170
Subsection 3. Nova Scotia.....	108	Subsection 1. Canada and Commonwealth Relations.....	170
Subsection 4. New Brunswick.....	109	Subsection 2. Canada and the United Nations.....	171
Subsection 5. Quebec.....	110	Subsection 3. Canada and the North Atlantic Treaty Organization .....	176
Subsection 6. Ontario.....	112	Subsection 4. Canadian External Aid Programs.....	178
Subsection 7. Manitoba.....	113	Subsection 5. Organization for Economic Co-operation and Development.....	181
Subsection 8. Saskatchewan.....	114		
Subsection 9. Alberta.....	115		
Subsection 10. British Columbia.....	116		
Subsection 11. Yukon Territory and Northwest Territories.....	117		
SECTION 3. MUNICIPAL GOVERNMENT.....	119		
SECTION 4. FEDERAL AND PROVINCIAL ROYAL COMMISSIONS.....	124		

*The interpretation of the symbols used in the tables throughout the Year Book  
will be found on p. viii of this volume.*

### PART I.—CONSTITUTION OF CANADA

The Canadian federal state, which today comprises ten provinces and two vast northern territories, had its beginning one hundred years ago in the enactment (Mar. 29, 1867) by the British Parliament of the British North America Act, 1867. Fashioned largely out of the Seventy-two Resolutions drafted at Quebec (1864) by the Fathers of Confederation, the British North America Act, 1867 provided for the federal union of the three British North American provinces (Canada, New Brunswick and Nova Scotia) in one Dominion under the name of "Canada".

---

\* Except where otherwise indicated, the information in this Chapter has been brought up to the date of Oct. 1, 1966. Certain changes occurring between that date and the date of going to press will be found in an Appendix to this volume. Also, official appointments made up to the date of going to press will be found in Chapter XXVII (see Index).



Although the new nation that came into being on July 1, 1867 was a federation comprised of four provinces, namely, Ontario, Quebec, New Brunswick and Nova Scotia, Sect. 146 of the Act provided for the admission into the Union of the Crown colonies of Prince Edward Island and Newfoundland on the Atlantic and the united (1866) island and mainland colony of British Columbia on the Pacific, and also of the vast expanse of Hudson's Bay Company territory in the North West known as "Rupert's Land and the North-Western Territory". Following the negotiation of an agreement on terms comprising the Company's surrender of its authority and territories to the Crown (which was to transfer them at once to Canada) and the retention of one twentieth of the land of the fertile belt (the southern territories) with designated blocks of land around its trading posts and a Canadian cash payment of £300,000, the new nation of Canada was ready to expand westward with considerable momentum across the Continent to the Pacific.

The acquisition by Canada of Rupert's Land and the North-Western Territory enabled the Red River settlement, after a few months of disturbance, to receive limited provincial establishment under the name of "Manitoba" in 1870; provided the Federal Government with the public lands needed to help subsidize a transcontinental railway linking the Pacific with the Canadian East, thereby fulfilling the pledge to British Columbia to begin the Canadian Pacific Railway within two years and to complete it within ten years of the date of union, July 20, 1871; and laid, through the provision of millions of acres of public lands, the land and economic bases for the Federal Government's adoption of a free-homestead policy for the Canadian prairies that, in conjunction with the completion of the Canadian Pacific Railway and the launching of other railway lines, brought wave after wave of settlers into the Northwest Territories in such numbers as to justify the creation of the two Provinces of Saskatchewan and Alberta in 1905 out of the portion of the Northwest Territories south of the 60th parallel of north latitude. Although provision for their entry was included in the British North America Act, 1867, the Province of Prince Edward Island held back from the Union until 1873 and Newfoundland became Canada's tenth province on Mar. 31, 1949.

The Constitution of Canada, which had a corporate beginning in 1867, combines, in a set of rules determining the creation and operation of the machinery or institutions of government, the Cabinet system of responsible government (based on an inheritance from Britain) with a Canadian adaptation of federalism (as then practised in the United States for eighty years). A written document, the British North America Act of 1867, contains a substantial portion of Canada's Constitution and this Act, with its various amendments,\* is popularly held to be the Canadian Constitution. There is, however, another and perhaps more important part which appears, through the evolutionary processes of historical growth, in various guises including well-established usages and conventions found in the unwritten provisions of the Constitution.

Thus, the British North America Act is not a comprehensive constitutional document presenting an exhaustive statement of fundamental laws and rules by which Canada is governed. The Constitution of Canada in its broadest sense includes other British statutes (such as the Statute of Westminster, 1931) and Orders in Council (notably those admitting various provinces and territories to the federation), Statutes of the Parliament of Canada relating to such matters as the succession to the Throne, the Royal Style and Titles, the Governor General, the Senate, the House of Commons, the creation of courts, the establishment of government departments, the franchise, elections, and also statutes of

\* See *A Consolidation of The British North America Acts 1867 to 1960*, consolidated by Elmer A. Driedger as of Jan. 1, 1964. Queen's Printer, Ottawa. 75 cents (Catalogue No. YX1-164). A further amendment was made in 1964 respecting old age pensions (see p. 90).

provincial legislatures relating to provincial constitutional institutions and government matters. Federal and provincial Orders in Council, legally authorized by their respective statutes, provide further constitutional material as do the decisions of the courts which interpret the British North America Act and all ordinary statutes and indeed possess the power to set aside any laws which they hold to be *ultra vires* or beyond the jurisdiction of the enacting legislative bodies, whether federal or provincial. Moreover, the Canadian Constitution comprises, in addition to the statutory law and its judicial interpretation, substantial sections of the common law, unwritten constitutional usages and conventions and principles of democratic government which were transplanted from Britain over two hundred years ago and since then have been thriving and evolving in the Canadian environment. For example, the Cabinet system of responsible government (see pp. 85-86) and its functioning through close identification of the executive and the legislative powers (that is, of the Cabinet and the House of Commons) is not mentioned in the British North America Act but derives from an unwritten convention of the Constitution.

Although the essential principles of Cabinet government are based in custom or constitutional usage, the federal structure of Canadian government rests on the explicit written provisions of the British North America Act. Apart from the creation of the federal union, the dominant feature of the Act and indeed of the Canadian federation was the distribution of powers between the central or federal government on the one hand and the component provincial governments on the other. In brief, the primary purpose was to grant to the Parliament of Canada legislative jurisdiction over all subjects of general or common interest, while giving to the provincial legislatures jurisdiction over all matters of local or particular interest (see p. 90 and pp. 105-106).

Unlike the written constitutions of many nations, the British North America Act lacks comprehensive "bill of rights" clauses, although it does accord specific constitutional protection to the use of the English and French languages (clause 133) and special safeguards with respect to sectarian or denominational schools. Such vital rights as freedom of speech, freedom of assembly, freedom of religion, freedom of the press, trial by jury and similar liberties enjoyed by the individual citizen are not recorded in the British North America Act but rather depend on the statute law and the common law inheritance. Security of these rights was confirmed by the passage of a Canadian Bill of Rights—An Act for the Recognition and Protection of Human Rights and Fundamental Freedoms (SC 1960, c. 44), assented to Aug. 10, 1960. (See also Chapter IX, Sect. 1 on Canadian Criminal Law and Procedure.)

**Treaty-Making Powers.\***—The Federal Government has exclusive responsibility for the conduct of external affairs as a matter of national policy affecting all Canadians. The policy of the Federal Government in discharging this responsibility is to seek to promote the interest of the entire country and of all Canadians of the various provinces within the over-all framework of the national policy.

In respect of matters of specific concern to the provinces of Canada, it is the policy of the Canadian Government, in a spirit of co-operative federalism, to do its utmost to assist the provinces in achieving the particular aspirations and goals that they wish to attain. The attitude of the Federal Government in this respect was illustrated by the "entente" signed by representatives of Quebec and France in the field of education in February 1965. The Quebec and federal authorities co-operated actively in a procedure

\* Extracted from "The Provinces and Treaty-Making Powers", Appendix to *Votes and Proceedings of the House of Commons of Canada*, No. 8. Apr. 26, 1965.

that enabled the Province of Quebec, within the framework of the Constitution and the national policy, to participate in international arrangements in a field of particular interest to that province.

Thus, under existing procedures, the position is that, once it is determined that what a province wishes to achieve through agreements in the field of education or in other fields of provincial jurisdiction falls within the framework of Canadian foreign policy, the provinces may discuss detailed arrangements directly with the competent authorities of the country concerned. When a formal international agreement is to be concluded, however, the federal powers relating to the signature of treaties and the conduct of over-all foreign policy must necessarily come into operation.

The approach of the Canadian Government to the question of Canadian representation in international organizations of a social, cultural or humanitarian character reflects the same constructive spirit. It recognizes the desirability of ensuring that the Canadian representation in such organizations and conferences reflects in a fair and balanced way provincial and other interests in these subjects.

**Amendment of the Constitution.**—No provision was made in the British North America Act of 1867 for amendment thereof by any legislative authority in Canada but both the Parliament of Canada and the provincial legislatures were given legislative jurisdiction with respect to some matters relating to government. Thus, for example, the Parliament of Canada was given jurisdiction with respect to the establishment of electoral districts and election laws and the privileges and immunities of Members of the House of Commons and the Senate, and each provincial legislature was empowered to amend the constitution of the province except as regards the office of Lieutenant-Governor. By an amendment to the British North America Act passed in 1949, the authority of the Parliament of Canada to legislate with respect to constitutional matters was considerably enlarged and it may now amend the Constitution of Canada except as regards the legislative authority of the provinces, the rights and privileges of provincial legislatures or governments, schools, the use of the English or the French language, and the duration of the House of Commons other than in time of real or apprehended war, invasion or insurrection.

The question of devising amendment procedure within Canada which satisfies the need to safeguard or entrench such basic provincial and minority rights as are noted immediately above and yet possesses sufficient flexibility to ensure that the Constitution can be altered to meet changing circumstances is one that still engages the attention of the federal and provincial governments and legislatures. An outline of the constitutional background to the problem, an annotated list of the fourteen occasions since 1867 when amendments to the British North America Act were made by the United Kingdom Parliament, a concise review of the prolonged search for a satisfactory amending procedure in Canada—the subject of repeated consideration in the Parliament of Canada and in a series of formal federal-provincial conferences and meetings in the years 1927, 1935-36, 1950, 1960-61 and 1964—and, more specifically, the text of a draft Bill “to provide for the amendment in Canada of the Constitution of Canada” (accompanied by explanatory notes relating thereto) which embodies the amending procedure or formula unanimously recommended by the Conference of Attorneys-General and unanimously accepted by the Conference of the Prime Minister and the Premiers (October 1964) are all made available in an official publication entitled *The Amendment of the Constitution of Canada*, authorized by the Minister of Justice, February 1965.\*

\* Available from the Queen's Printer, Ottawa. \$2 (Cat. No. J2-1665).



# 1.—Provinces and Territories of Canada, Dates of Admission to Confederation, Legislative Processes by which Admission was Effected, Present Area and Seat of Government

Province, Territory or District	Date of Admission or Creation	Legislative Process	Present Area (sq. miles)	Seat of Provincial or Territorial Government
Ontario <sup>1</sup> .....	July 1, 1867	Act of Imperial Parliament—The British North America Act, 1867 (Br. Stat. 1867, c. 3) and Imperial Order in Council, May 22, 1867.	412,582	Toronto
Quebec <sup>2</sup> .....	July 1, 1867		594,860	Quebec
Nova Scotia.....	July 1, 1867		21,425	Halifax
New Brunswick.....	July 1, 1867		28,354	Fredericton
Manitoba <sup>3</sup> .....	July 15, 1870	Manitoba Act, 1870 (SC 1870, c. 3) and Imperial Order in Council, June 23, 1870.	251,000	Winnipeg
British Columbia.....	July 20, 1871	Imperial Order in Council, May 16, 1871..	366,255	Victoria
Prince Edward Island....	July 1, 1873	Imperial Order in Council, June 26, 1873..	2,184	Charlotte-town
Saskatchewan <sup>4</sup> .....	Sept. 1, 1905	Saskatchewan Act, 1905 (SC 1905, c. 42)..	251,700	Regina
Alberta <sup>4</sup> .....	Sept. 1, 1905	Alberta Act, 1905 (SC 1905, c. 3).....	255,285	Edmonton
Newfoundland.....	Mar. 31, 1949	The British North America Act, 1949 (Br. Stat. 1949, c. 22).....	156,185	St. John's
Northwest Territories <sup>5</sup> ...	July 15, 1870	Act of Imperial Parliament—Rupert's Land Act, 1868 (Br. Stat. 1868, c. 105) and Imperial Order in Council, June 23, 1870.....	1,304,903	Ottawa <sup>7</sup>
Mackenzie <sup>6</sup> .....	Jan. 1, 1920	Order in Council, Mar. 16, 1918.....	527,490	
Keewatin <sup>6</sup> .....	Jan. 1, 1920		228,160	
Franklin <sup>6</sup> .....	Jan. 1, 1920		549,253	
Yukon Territory <sup>8</sup> .....	June 13, 1898	Yukon Territory Act, 1898 (SC 1898, c. 6)	207,076	Whitehorse
<b>Canada.....</b>			<b>3,851,809</b>	

<sup>1</sup> The area of Ontario was extended by the Ontario Boundaries Extension Act, 1912 (SC 1912, c. 40).

<sup>2</sup> Extended by Quebec Boundaries Extension Act, 1912 (SC 1912, c. 45) and diminished Mar. 1, 1927 in consequence of the Award of the Judicial Committee of the British Privy Council whereby approximately 112,000 sq. miles of territory (formerly considered as part of Quebec) was assigned to Newfoundland.

<sup>3</sup> Extended by the Extension of Boundaries Act of Manitoba, 1881 and the Manitoba Boundaries Extension Act, 1912 (SC 1912, c. 32).

<sup>4</sup> Saskatchewan and Alberta created as provinces in 1905 from the area formerly comprised in the provisional districts of Assiniboia, Athabaska, Alberta and Saskatchewan established May 17, 1882 by minute of Canadian Privy Council concurred in by Dominion Parliament and Order in Council, Oct. 2, 1895.

<sup>5</sup> By an Imperial Order in Council passed on June 23, 1870 pursuant to the Rupert's Land Act, 1868 (Br. Stat. 1868, c. 105), the former territories of the Hudson's Bay Company known as Rupert's Land and the North-Western Territory were transferred to Canada effective July 15, 1870. These territories were designated as the North-West Territories by the Act of SC 1869, c. 3 and as the Northwest Territories by RSC 1906, c. 62. By Imperial Order in Council of July 31, 1880 (effective Sept. 1, 1880), all British territories and possessions in North America not already included within Canada and all islands adjacent thereto (with the exception of the Colony of Newfoundland and its dependencies) were annexed to Canada and these additional territories were formally included in the North-West Territories by SC 1905, c. 27. The Province of Manitoba was formed out of a portion of the territories by the Manitoba Act, 1870 (SC 1870, c. 3) and a further portion was added to Manitoba in 1881 by SC 1881, c. 14. The Provinces of Alberta and Saskatchewan were formed out of portions of the territories in 1905 and in 1912 other portions were added to Manitoba, Ontario and Quebec.

<sup>6</sup> By SC 1876, c. 21, a separate district to be known as the District of Keewatin was established and provision was made for the local government thereof. The Act was expressed to come into force by proclamation. It provided that portions of the District might be re-annexed to the North-West Territories by proclamation; in 1886 a portion of the District of Keewatin was re-annexed and in 1905 the entire Keewatin District was re-annexed. The Act of 1876 was never proclaimed. By Order in Council of May 8, 1882 the provisional districts of Assiniboia, Saskatchewan, Alberta and Athabaska were created for the convenience of settlers and for postal purposes. By Order in Council of Oct. 2, 1895 the further provisional districts of Ungava, Franklin, Mackenzie and Yukon were created. The boundaries of these provisional districts were re-defined by Order in Council of Dec. 18, 1897. Subsequently the Yukon Territory was formed, the Provinces of Alberta and Saskatchewan were created and other portions of the territories were annexed to Quebec, Ontario and Manitoba. By Order in Council dated Mar. 16, 1918 (effective Jan. 1, 1920) the remaining portions of the Northwest Territories were divided into three provisional districts known as Mackenzie, Keewatin and Franklin.

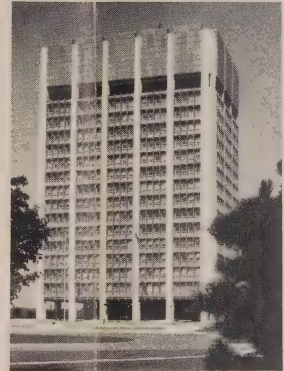
<sup>7</sup> See pp. 118-119.

<sup>8</sup> The provisional district of Yukon established in 1895 was created a judicial district of the North-West Territories by proclamation issued pursuant to Sect. 51 of the North-West Territories Act (RSC 1886, c. 50) on Aug. 16, 1897 and by the Yukon Territory Act (SC 1898, c. 6) was declared to be a separate Territory.



Wellington Street in central Ottawa. On the north side may be seen the new National Library, the Supreme Court and the towers of the Justice, the Confederation and the Parliament Buildings; opposite are the Trade and Commerce, Veterans Affairs and Bank of Canada buildings.

The Headquarters of the Department of National Health and Welfare is the focal building at Tunney's Pasture in west-central Ottawa, which now contains eighteen buildings of various sizes.



Part of the great complex of National Research Council buildings, east of Ottawa.



The new administration building of the Department of Agriculture in the Experimental Farm, south-central Ottawa.



Confederation Heights, south Ottawa, contains six buildings housing the Canadian Broadcasting Corporation administration, the Fisheries, Insurance and Post Office Departments, Public Works administration, the Communications Branch of the National Research Council, and other services.



FEDERAL GOVERNMENT  
BUILDINGS IN OTTAWA are quite diversified in design. The early, centrally located buildings followed the architecture or a modified version of the architecture of the Parliament Buildings. However, most Departments of Government have been re-housed within the past fifteen years and the new buildings are mainly functional in character. As the city grew in size and traffic became a problem, the centralization of Departments was considered impracticable and the buildings of recent construction are grouped in areas scattered throughout the city and its environs.

Photos by:

Malak, Ottawa (colour)  
Department of National Health and Welfare  
National Research Council  
Department of Agriculture.



## PART II.—MACHINERY OF GOVERNMENT

### Section 1.—The Federal Government

Canadian governmental machinery or institutions function through the application of the British North America Act and its amendments and those other constitutional principles and developments—both “written” and “unwritten”—that have evolved from the combination of British law and traditions with Quebec’s adherence to the French language and habits of mind, all within a New World transcontinental environment. They are classified into three branches—the Executive, the Legislature and the Judiciary—and exist for each of the three levels of government in Canada—federal, provincial and municipal—functioning within their respective jurisdictions as specified respectively by the provisions of the British North America Act and by their statutes of origin.

Despite this *division* of the Government of Canada into three separate branches, Canada’s system of responsible government was long ago evolved from the British practice of the *union* of the executive and legislative branches which is the antithesis of the United States system embodying the opposing principle of the division or *separation* of executive, legislative and judicial powers or authorities from one another. As recounted under the heading of The Cabinet (pp. 85-86), there is a close identification of the Canadian legislative and executive branches of government, with final direction and authority emanating from the former. The Prime Minister and his Cabinet, which formulates and carries out all executive policy, have seats in Parliament and are responsible at all times to the House of Commons and it is here that the *principle of the union* of powers finds its significant expression. On the other hand, the guarantee of the independence of the judiciary, whose superior court judges are appointed by the Governor General (in actual fact by the Prime Minister), is ensured in the constitutional provision that they shall hold office during good behaviour and can be removed by the Governor General only after a joint address of both Houses of Parliament; in this guarantee is found a limited acceptance of the principle of separation of powers, for judges cannot be removed because their decisions happen to be disliked by the Cabinet, by Parliament, or by the people; they can conscientiously perform their judicial functions without fear or intimidation.

In addition to the political institutions embraced by the executive and legislative branches, the machinery of the government at the federal level includes the non-political public service consisting of employees of the state organized in 24 departments of government, some two dozen special boards and commissions, and about 45 Crown corporations or other agencies engaged in administering various public services under their respective statutes and ultimately accountable, through a Minister, to Parliament. Part III of this Chapter recounts briefly the administrative functions of the Federal Government under four Sections, the first three describing the financial administration of the Government of Canada, the functions of each department, board, commission, and of each Crown corporation (whether classified as departmental, agency or proprietary under the Financial Administration Act) and the fourth listing the principal Acts of Parliament grouped according to the department charged with the administration thereof.

The changing demands on government in this technical age with respect to economic planning, social adjustment and individual welfare were reflected recently in a major reorganization of the administrative responsibilities of the Government of Canada. Although many of the features of this reorganization were first announced in a background statement by the Prime Minister on Dec. 17, 1965 and certain of the immediate objectives with respect to the transfer of duties and responsibilities from one Minister and Department to another were implemented through Orders in Council (published in the *Canada Gazette* of Jan. 12, 1966) under the Public Service Rearrangement and Transfer of Duties Act, the establishment of new Departments and the altering of the names of others required legislative enactment. To this end, the Government Organization Bill (No. C-178), was passed by the Commons on June 6, 1966 and received Royal Assent on June 16, 1966. The Act (SC 1966, c. 25), proclaimed in effect as of Oct. 1, 1966, authorizes the establish-

ment of the Departments of the Solicitor General of Canada, the Registrar General of Canada, Indian Affairs and Northern Development, Manpower and Immigration, Energy, Mines and Resources, and Forestry and Rural Development, and of the office of President of the Treasury Board; the establishment of the offices of Ministers of these Departments and the designation of their respective powers, duties and functions; and the appointment of deputy heads of the new Departments and other officers, employees, etc. These numerous changes in government organization and the delineation of the respective policies and administrative functions of the Ministers and their Departments are outlined at pp. 130-150 and presented visually in the accompanying government organization chart.

### Subsection 1.—The Executive

**The Crown.**—The British North America Act of 1867 (Sect. 9) provides that "the Executive Government and authority of and over Canada is . . . vested in the Queen". The functions of the Crown, which are substantially the same as those of The Queen in relation to the British Government, are discharged in Canada by the Governor General in accordance with established principles of responsible government.

**The Queen.**—The personal participation of The Queen in the functions of the Crown in Canada has been limited to such occasions as the granting of honours and awards, approval of changes in the Table of Precedence, institution of new military awards, or the periodic appointment of a Governor General. On the occasion of a royal visit, The Queen may participate in those ceremonies that otherwise are carried out in her name, such as the opening and dissolution of Parliament, the assent to Bills and the granting of a general amnesty.

Apart from her constitutional position in relation to the various governments of the Commonwealth countries, The Queen is Head of the Commonwealth and symbolizes the association of the member countries. Until 1953 the title of The Queen was the same throughout the Commonwealth. Constitutional developments put the title somewhat out of accord with the facts of the position, and in December 1952 it was decided by the Prime Ministers of the Commonwealth countries meeting at London, England, that new forms of title for each country should be devised. The title for Canada was approved by Parliament and established by a Royal Proclamation on May 28, 1953. The title of The Queen, as far as Canada is concerned, now is:—

"Elizabeth the Second, by the Grace of God of the United Kingdom, Canada and Her other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith".

### 1.—Sovereigns of Canada since Confederation, 1867

Name	Dynasty	Year of Birth	Date of Accession
Victoria.....	House of Hanover.....	1819	June 20, 1837
Edward VII.....	House of Saxe-Coburg and Gotha.....	1841	Jan. 22, 1901
George V.....	House of Windsor.....	1865	May 6, 1910
Edward VIII.....	House of Windsor.....	1894	Jan. 20, 1936
George VI.....	House of Windsor.....	1895	Dec. 11, 1936
Elizabeth II.....	House of Windsor.....	1926	Feb. 6, 1952

**The Governor General.**—The Governor General, appointed by The Queen as her personal representative in Canada on the advice of the Prime Minister of Canada, traditionally serves for a term of five years. He exercises the executive authority of The Queen in relation to the Government of Canada under Letters Patent issued under the Great Seal of Canada (revised and re-issued, effective Oct. 1, 1947) and the provisions of the British North America Acts, 1867 to 1964. Acting under the recommendations of his responsible Ministers, in The Queen's name, he summons, prorogues and dissolves Parliament, assents to Bills, and exercises other executive functions.

The Governor General's annual salary and allowances provided by the Parliament of Canada are \$48,666 and \$72,000, respectively. Office expenses and certain other items of expenditure are provided for in the estimates for the Office of the Secretary to the Governor General.

The present Governor General is styled His Excellency General The Right Honourable Georges P. Vanier, D.S.O., M.C., C.D.

## 2.—Governors General of Canada since Confederation, 1867

Name	Date of Appointment	Date of Assumption of Office
THE VISCOUNT MONCK OF BALLYTRAMMON.....	June 1, 1867	July 1, 1867
THE BARON LISGAR OF LISGAR AND BAILIEBOROUGH.....	Dec. 29, 1868	Feb. 2, 1869
THE EARL OF DUFFERIN.....	May 22, 1872	June 25, 1872
THE MARQUIS OF LORNE.....	Oct. 5, 1878	Nov. 25, 1878
THE MARQUIS OF LANSDOWNE.....	Aug. 18, 1883	Oct. 23, 1883
THE BARON STANLEY OF PRESTON.....	May 1, 1888	June 11, 1888
THE EARL OF ABERDEEN.....	May 22, 1893	Sept. 18, 1893
THE EARL OF MINTO.....	July 30, 1898	Nov. 12, 1898
THE EARL GREY.....	Sept. 26, 1904	Dec. 10, 1904
FIELD MARSHAL H. R. H. THE DUKE OF CONNAUGHT.....	Mar. 21, 1911	Oct. 13, 1911
THE DUKE OF DEVONSHIRE.....	Aug. 19, 1916	Nov. 11, 1916
GENERAL THE BARON BYNG OF VIMY.....	Aug. 2, 1921	Aug. 11, 1921
THE VISCOUNT WILLINGDON OF RATTON.....	Aug. 5, 1926	Oct. 2, 1926
THE EARL OF BESSBOROUGH.....	Feb. 9, 1931	Apr. 4, 1931
THE BARON TWEEDSMUIR OF ELSFIELD.....	Aug. 10, 1935	Nov. 2, 1935
MAJOR GENERAL THE EARL OF ATHLONE.....	Apr. 3, 1940	June 21, 1940
FIELD MARSHAL THE VISCOUNT ALEXANDER OF TUNIS.....	Mar. 21, 1946	Apr. 12, 1946
THE RIGHT HONOURABLE VINCENT MASSEY.....	Jan. 24, 1952	Feb. 28, 1952
GENERAL THE RIGHT HONOURABLE GEORGES P. VANIER.....	Aug. 1, 1959	Sept. 15, 1959

**The Cabinet.**—The Cabinet is a committee of Ministers chosen by the Prime Minister (the leader of the political party forming the Government of the Day) generally from Members of Parliament. By convention, all members of the Cabinet either have seats in Parliament or secure seats within a short time and, again by convention, all Ministers in charge of departments of government are generally Members of the House of Commons although there is nothing in the Constitution to prevent a Minister with Portfolio being a Senator.\* However, they generally prefer to have seats in the House of Commons where all crucial legislation, by convention, is introduced and where they can offer explanations necessary to secure passage of their Estimates or legislation with which they are deeply concerned. Ministers without Portfolio (without a department to administer) can be members of either the House of Commons or the Senate. Frequently the Cabinet contains one Minister without Portfolio—usually the Leader of the Government in the Senate—and perhaps one or two others chosen for a variety of reasons such as the desirability of including certain provincial or sectional representation that might otherwise be lacking in the Ministry.

Cabinet members are selected by the Prime Minister in such manner as to ensure, as far as possible, representation of the several geographical and political regions of the country and its principal ethnic, religious and social interests. Each Cabinet Minister generally assumes charge of one of the departments of government, although a Minister may hold more than one portfolio at the same time or he may hold one or more portfolios and one or more acting portfolios, or a Minister without Portfolio may hold one or more acting portfolios. In his acting capacity, the Minister exercises the same authority as if he were the Minister of the department.

The position of Prime Minister, the keystone of the Cabinet, is one of exceptional authority. He alone makes recommendations on the dissolution and convocation of Parliament, appointment of Privy Councillors, Cabinet Ministers, Lieutenant-Governors,

\* Senator the Hon. Gideon Decker Robertson held the portfolio of Minister of Labour for the periods Nov. 7, 1918 to Dec. 29, 1921 and Aug. 7, 1930 to Feb. 2, 1932; Senator the Hon. Malcolm Wallace McCutcheon served as Minister of Trade and Commerce from Feb. 12 to Apr. 22, 1963.



Chief Justices, Senators, Speakers of the Senate and House of Commons, and Deputy Heads of departments. The Cabinet, under his leadership, directs the business of the Commons, initiates nearly all public Bills placed before Parliament, and has complete responsibility for the initiation of taxes and the recommendation of expenditures. Following established precedent or convention, it is always responsible to the Commons. When the Cabinet (the Government) suffers defeat on a Government Bill or a vote of censure or on a motion of want of confidence in the Commons, the existing Government or Cabinet must either resign or request a dissolution from the Governor General. If it resigns, the Governor General may call on the Leader of the Opposition in the Commons to form a new Government. Alternatively, if a Government that has been defeated in the House is granted a dissolution and is defeated in the ensuing general election, then, should no clear majority be indicated, the Government may decide (1) to remain in office and seek a vote of confidence in the House when it meets or (2) to resign immediately with the consequent result that the Governor General will ask the leader of the party with the highest number of members returned to form a new Government. These alternatives may also eventuate as a result of a general election subsequent to the normal dissolution of Parliament at or near the close of its statutory life.

The primary responsibility of the Governor General in either of the above circumstances is to provide the nation with a Cabinet or Ministry capable of conducting Her Majesty's Government with the support of the House of Commons.

The Prime Ministers since Confederation are listed in Table 3 and the members of the Ministry as at Oct. 1, 1966 in Table 4. Sessional and other allowances received by Cabinet Ministers are given at pp. 100-101.

**3.—Prime Ministers since Confederation, 1867**

Ministry	Prime Minister	Length of Administration
1	Rt. Hon. Sir JOHN ALEXANDER MACDONALD.....	July 1, 1867 — Nov. 5, 1873
2	Hon. ALEXANDER MACKENZIE.....	Nov. 7, 1873 — Oct. 16, 1878
3	Rt. Hon. Sir JOHN ALEXANDER MACDONALD.....	Oct. 17, 1878 — June 6, 1891
4	Hon. Sir JOHN JOSEPH CALDWELL ABBOTT.....	June 16, 1891 — Nov. 24, 1892
5	Rt. Hon. Sir JOHN SPARROW DAVID THOMPSON.....	Dec. 5, 1892 — Dec. 12, 1894
6	Hon. Sir MACKENZIE BOWELL.....	Dec. 21, 1894 — Apr. 27, 1896
7	Rt. Hon. Sir CHARLES TUPPER.....	May 1, 1896 — July 8, 1896
8	Rt. Hon. Sir WILFRID LAURIER.....	July 11, 1896 — Oct. 6, 1911
9	Rt. Hon. Sir ROBERT LAIRD BORDEN.....	Oct. 10, 1911 — Oct. 12, 1917 (Conservative Administration)
10	Rt. Hon. Sir ROBERT LAIRD BORDEN.....	Oct. 12, 1917 — July 10, 1920 (Unionist Administration)
11	Rt. Hon. ARTHUR MEIGHEN.....	July 10, 1920 — Dec. 29, 1921 (Unionist—"National Liberal and Conservative Party")
12	Rt. Hon. WILLIAM LYON MACKENZIE KING.....	Dec. 29, 1921 — June 28, 1926
13	Rt. Hon. ARTHUR MEIGHEN.....	June 29, 1926 — Sept. 25, 1926
14	Rt. Hon. WILLIAM LYON MACKENZIE KING.....	Sept. 25, 1926 — Aug. 6, 1930
15	Rt. Hon. RICHARD BEDFORD BENNETT.....	Aug. 7, 1930 — Oct. 23, 1935
16	Rt. Hon. WILLIAM LYON MACKENZIE KING.....	Oct. 23, 1935 — Nov. 15, 1948
17	Rt. Hon. LOUIS STEPHEN ST. LAURENT.....	Nov. 15, 1948 — June 21, 1957
18	Rt. Hon. JOHN GEORGE DIEFENBAKER.....	June 21, 1957 — Apr. 22, 1963
19	Rt. Hon. LESTER BOWLES PEARSON.....	Apr. 22, 1963 — ...

**4.—Members of the Nineteenth Ministry, as at Oct. 1, 1966<sup>1</sup>**

(According to precedence of Ministers)

NOTE.—A complete list of the members of Federal Ministries from Confederation to 1913 appears in the 1912 Year Book, pp. 422-429. Later Ministries will be found in subsequent editions.

Office	Occupant	Date of First Appointment	Date of Appointment to Present Portfolio
Prime Minister.....	Rt. Hon. LESTER BOWLES PEARSON....	Apr. 22, 1963	Apr. 22, 1963
Secretary of State for External Affairs.....	Hon. PAUL JOSEPH JAMES MARTIN.....	Apr. 22, 1963	Apr. 22, 1963
Minister of Trade and Commerce.....	Hon. ROBERT HENRY WINTERS.....	Jan. 4, 1966	Jan. 4, 1966
Minister of Transport.....	Hon. JOHN WHITNEY PICKERSGILL.....	Apr. 22, 1963	Feb. 3, 1964
Minister of National Defence.....	Hon. PAUL THEODORE HELLYER.....	Apr. 22, 1963	Apr. 22, 1963
Minister of Finance and Receiver General of Canada.....	Hon. MITCHELL SHARP.....	Apr. 22, 1963	Apr. 22, 1963
Minister of Public Works.....	Hon. GEORGE JAMES McILRAITH.....	Apr. 22, 1963	Dec. 17, 1965
Minister of Indian Affairs and Northern Development.....	Hon. ARTHUR LAING.....	Apr. 22, 1963	Apr. 22, 1963
Minister of Justice and Attorney General of Canada.....	Hon. LUCIEN CARDIN.....	Apr. 22, 1963	Dec. 17, 1965
Minister of National Health and Welfare.....	Hon. ALLAN JOSEPH MACEachEN.....	Apr. 22, 1963	Dec. 17, 1965
Minister of Fisheries.....	Hon. HÉDARD ROBICHAUD.....	Apr. 22, 1963	Apr. 22, 1963
Minister of Veterans Affairs.....	Hon. ROGER TEILLET.....	Apr. 22, 1963	Apr. 22, 1963
Secretary of State of Canada.....	Hon. JUDY V. LaMARSH.....	Apr. 22, 1963	Dec. 17, 1965
Minister of Industry and Minister of Defence Production.....	Hon. CHARLES MILLS DRURY.....	Apr. 22, 1963	(July 25, 1963 Apr. 22, 1963)
President of the Queen's Privy Council for Canada and Registrar General of Canada.....	Hon. GUY FAVREAU.....	Apr. 22, 1963	Dec. 17, 1965
Minister of Labour.....	Hon. JOHN ROBERT NICHOLSON.....	Apr. 22, 1963	Dec. 17, 1965
Member of the Administration and Leader of the Government in the Senate.....	Hon. JOHN JOSEPH CONNOLLY.....	Feb. 3, 1964	Feb. 3, 1964
Minister of Forestry and Rural Development.....	Hon. MAURICE SAUVÉ.....	Feb. 3, 1964	Feb. 3, 1964
Minister of National Revenue and President of the Treasury Board.....	Hon. EDGAR JOHN BENSON.....	June 29, 1964	June 29, 1964
Associate Minister of National Defence.....	Hon. LÉO ALPHONSE JOSEPH CADIEUX.....	Feb. 15, 1965	Feb. 15, 1965
Solicitor General of Canada.....	Hon. LAWRENCE T. PENNELL.....	Dec. 17, 1965	Dec. 17, 1965
Minister of Energy, Mines and Resources.....	Hon. JEAN-LUC PÉPIN.....	Dec. 17, 1965	Dec. 17, 1965
Minister of Manpower and Immigration.....	Hon. JEAN MARCHAND.....	Dec. 17, 1965	Dec. 17, 1965
Minister of Agriculture.....	Hon. JOHN JAMES GREENE.....	Dec. 17, 1965	Dec. 17, 1965
Postmaster General.....	Hon. JOSEPH JULIEN JEAN-PIERRE CÔTÉ.....	Dec. 17, 1965	Dec. 17, 1965
Member of the Administration.....	Hon. JOHN NAPIER TURNER.....	Dec. 17, 1965	Dec. 17, 1965

<sup>1</sup> Changes occurring between Oct. 1, 1966 and the date of going to press will be carried in an Appendix to this volume.

**Parliamentary Secretaries.**—The Parliamentary Secretaries Act (SC 1959, c. 15), assented to June 4, 1959, provides for the appointment of 16 Parliamentary Secretaries from among the Members of the House of Commons to assist the respective Ministers in such manner as each Minister may direct. The Government thus revived the system of parliamentary assistantships in practice during the World War II and postwar years subsequent to 1943, whereby Cabinet Ministers might receive assistance in the performance of their parliamentary functions and promising Members of the House might secure a degree of apprenticeship for higher public office. Parliamentary Secretaries hold office for 12 months.

At Oct. 1, 1966, the following Parliamentary Secretaries were in office:—

<u>Secretary</u>	<u>Minister</u>
JOHN MATHESON.....	Prime Minister Agriculture Manpower and Immigration External Affairs Finance and Receiver General Fisheries Labour Energy, Mines and Resources National Health and Welfare National Revenue and President of the Treasury Board Indian Affairs and Northern Development Public Works Secretary of State Trade and Commerce Transport
PIERRE ELLIOT TRUDEAU.....	
BRUCE S. BEER.....	
JOHN C. MUNRO.....	
DONALD S. MACDONALD.....	
J.-J. JEAN CHRÉTIEN.....	
RICHARD CASHIN.....	
BRYCE S. MACKASEY.....	
JACK DAVIS.....	
MARGARET RIDEOUT.....	
JAMES E. WALKER.....	
STANLEY HADASZ.....	
JOHN B. STEWART.....	
ALBERT BÉCHARD.....	
JEAN-CHARLES CANTIN.....	
JAMES A. BYRNE.....	

**The Privy Council.**—The British North America Act of 1867 (Sect. 11) provides for "a Council to aid and advise in the Government of Canada, to be styled the Queen's Privy Council for Canada . . .". At present it consists of about 115 members sworn of the Council by the Governor General on the advice of the Prime Minister. Membership in the Privy Council is for life so that Privy Councillors include both former and present Ministers of the Crown as well as a number of persons who have been, from time to time as an honour, sworn as Privy Councillors; these include members of the Royal Family, past and present Commonwealth Prime Ministers, and former Speakers of the Senate and of the House of Commons of Canada. The Council seldom meets as a body and its constitutional responsibilities as adviser to the Crown in respect to Canada are performed exclusively by a Committee; the membership thereof, with a few historical exceptions, is identical to that of the Cabinet of the Day. A clear distinction between the functions of the Committee of the Privy Council and the Cabinet is rarely made and actually the terms "Council" and "Cabinet" are commonly employed as synonyms.

### 5.—Members of the Queen's Privy Council for Canada According to Seniority Therein, as at Oct. 1, 1966

President of the Privy Council, . . . . . Hon. GUY FAVREAU

Clerk of the Privy Council and Secretary to the Cabinet, . . . . . R. G. ROBERTSON

NOTE.—In this list the prefix "Rt. Hon." indicates membership in the British Privy Council.

Member <sup>1</sup>	Date When Sworn In	Member <sup>1</sup>	Date When Sworn In
Hon. THOMAS ALEXANDER CRERAR . . . . .	Oct. 12, 1917	Hon. DONALD METHUEN FLEMING . . . . .	June 21, 1957
Hon. HENRY HERBERT STEVENS . . . . .	Sept. 21, 1921	Hon. ALFRED JOHNSON BROOKS . . . . .	June 21, 1957
Hon. EDWARD JAMES McMURRAY . . . . .	Nov. 14, 1923	Hon. GEORGE HEES . . . . .	June 21, 1957
Rt. Hon. CHARLES VINCENT MASSEY . . . . .	Sept. 16, 1925	Hon. LEON BALCHER . . . . .	June 21, 1957
H.R.H. THE DUKE OF WINDSOR . . . . .	Aug. 2, 1927	Hon. GEORGE RANDOLPH PEAKES . . . . .	June 21, 1957
Hon. DONALD MATHESON SUTHERLAND . . . . .	Aug. 7, 1930	Hon. GORDON CHURCHILL . . . . .	June 21, 1957
Hon. THOMAS GEROW MURPHY . . . . .	Aug. 7, 1930	Hon. EDMUND DAVIE FULTON . . . . .	June 21, 1957
Hon. WILLIAM EARL ROWE . . . . .	Aug. 30, 1935	Hon. DOUGLAS SCOTT HARKNESS . . . . .	June 21, 1957
Hon. CHARLES GAVAN POWER . . . . .	Oct. 23, 1935	Hon. ELLEN LOUKS FAIRCLOUGH . . . . .	June 21, 1957
Rt. Hon. JAMES LORIMER LISLEY . . . . .	Oct. 23, 1935	Hon. J. ANGUS MACLEAN . . . . .	June 21, 1957
Hon. JOSEPH ENOIL MICHAUD . . . . .	Oct. 23, 1935	Hon. MICHAEL STARR . . . . .	June 21, 1957
Hon. COLIN WILLIAM GEORGE GIBSON . . . . .	July 8, 1940	Hon. WILLIAM MCLEAN HAMILTON . . . . .	June 21, 1957
Hon. JOSEPH THORARINN THORSON . . . . .	June 11, 1941	Hon. JAMES MACKERRAS MACDONNELL . . . . .	June 21, 1957
Hon. WILLIAM FERDINAND ALPHONSE TURGEON . . . . .	Oct. 8, 1941	Hon. WILLIAM J. BROWNE . . . . .	June 21, 1957
Rt. Hon. LOUIS STEPHEN ST. LAURENT . . . . .	Dec. 10, 1941	Hon. JAY WALDO MONTEITH . . . . .	Aug. 22, 1957
Hon. JOSEPH ARTHUR JEAN . . . . .	Apr. 18, 1945	Hon. FRANCIS ALVIN GEORGE HAMILTON . . . . .	Aug. 22, 1957
Hon. LIONEL CHEVRIER . . . . .	Apr. 18, 1945	H.R.H. THE PRINCE PHILIP, Duke of Edinburgh . . . . .	Oct. 14, 1957
Hon. PAUL JOSEPH JAMES MARTIN <sup>2</sup> . . . . .	Apr. 18, 1945	Hon. RAYMOND JOSEPH MICHAEL O'HURLEY . . . . .	May 12, 1958
Hon. DOUGLAS CHARLES ABBOTT . . . . .	Apr. 18, 1945	Hon. HENRI COURTEMANCE . . . . .	May 12, 1958
Hon. THOMAS VIEN . . . . .	July 19, 1945	Hon. DAVID JAMES WALKER . . . . .	Aug. 20, 1959
Hon. WISHART MCLEA ROBERTSON . . . . .	Sept. 4, 1945	Hon. JOSEPH PIERRE ALBERT SÉVIGNY . . . . .	Aug. 20, 1959
Hon. MILTON FOWLER GREGG . . . . .	Sept. 2, 1947	Hon. HUGH JOHN FLEMMING . . . . .	Oct. 11, 1960
Hon. ROBERT WELLINGTON MAYHEW . . . . .	June 11, 1948	Hon. NOËL DORION . . . . .	Oct. 11, 1960
Rt. Hon. LESTER BOWLES PEARSON <sup>3</sup> . . . . .	Sept. 10, 1948	Hon. WALTER DINSDALE . . . . .	Oct. 11, 1960
Hon. STUART SINCLAIR GARSON . . . . .	Nov. 15, 1948	Hon. GEORGE ERNEST HALPENNY . . . . .	Oct. 11, 1960
Hon. ROBERT HENRY WINTERS . . . . .	Nov. 15, 1948	Hon. ROBERT HENRY MCGREGOR . . . . .	Dec. 21, 1960
Hon. CHARLES JOST BURCHELL . . . . .	Apr. 1, 1949	Hon. WALTER MORLEY ASELTINE . . . . .	Dec. 28, 1961
Hon. HUGUES LAPOINTE . . . . .	Aug. 25, 1949	Hon. LESLIE MISCAMPBELL FROST . . . . .	Dec. 28, 1961
Hon. GABRIEL ÉDOUARD RINFRET . . . . .	Aug. 25, 1949	Hon. JACQUES FLYNN . . . . .	Dec. 28, 1961
Hon. WALTER EDWARD HARRIS . . . . .	Jan. 18, 1950	Hon. JOHN BRACKEN . . . . .	May 4, 1962
Hon. GEORGE PRUDHAM . . . . .	Dec. 13, 1950	Hon. PAUL MARTINEAU . . . . .	Aug. 9, 1962
EARL ALEXANDER OF TUNIS . . . . .	Jan. 29, 1952	Hon. RICHARD ALBERT BELL . . . . .	Aug. 9, 1962
Hon. JAMES SINCLAIR . . . . .	Oct. 15, 1952	Hon. MALCOLM WALLACE MCCUTCHEON . . . . .	Aug. 9, 1962
Hon. RALPH OSBORNE CAMPNEY . . . . .	Oct. 15, 1952	Hon. ROLAND MICHENER . . . . .	Oct. 15, 1962
Hon. WILLIAM ROSS MACDONALD . . . . .	May 12, 1953	Hon. MARCEL LAMBERT . . . . .	Feb. 12, 1963
Hon. GEORGE ALEXANDER DREW . . . . .	May 12, 1953	Hon. THÉOGÈNE RICARD . . . . .	Mar. 18, 1963
Hon. JOHN WHITNEY PICKERSGILL <sup>2</sup> . . . . .	June 12, 1953	Hon. FRANK CHARLES MCGEE . . . . .	Mar. 18, 1963
Hon. JEAN LESAGE . . . . .	Sept. 17, 1953	Hon. MARTIAL ASSLIN . . . . .	Mar. 18, 1963
Hon. GEORGE CARLYLE MARLER . . . . .	July 1, 1954	Hon. WALTER LOCKHART GORDON . . . . .	Apr. 22, 1963
Hon. ROCH PINARD . . . . .	July 1, 1954	Hon. MITCHELL SHARP <sup>2</sup> . . . . .	Apr. 22, 1963
Hon. LOUIS RENÉ BEAUDOIN . . . . .	Apr. 15, 1957	Hon. AZELUS DENIS . . . . .	Apr. 22, 1963
Hon. PAUL THEODORE HELLYER <sup>2</sup> . . . . .	Apr. 26, 1957	Hon. GEORGE JAMES MCILRAITH <sup>2</sup> . . . . .	Apr. 22, 1963
Rt. Hon. JOHN GEORGE DIEFENBAKER . . . . .	June 21, 1957		
Hon. HOWARD CHARLES GREEN . . . . .	June 21, 1957		

For footnotes, see end of table.



### 5.—Members of the Queen's Privy Council for Canada According to Seniority Therein, as at Oct. 1, 1966—concluded

Member <sup>1</sup>	Date When Sworn In	Member <sup>1</sup>	Date When Sworn In
Hon. WILLIAM MOORE BENDICKSON....	Apr. 22, 1963	Hon. JOHN JOSEPH CONNOLLY <sup>2</sup> .....	Feb. 3, 1964
Hon. ARTHUR LAING <sup>2</sup> .....	Apr. 22, 1963	Hon. MAURICE SAUVÉ <sup>2</sup> .....	Feb. 3, 1964
Hon. MAURICE LAMONTAGNE.....	Apr. 22, 1963	Hon. YVON DUPUIS.....	Feb. 3, 1964
Hon. LUCIEN CARDIN <sup>2</sup> .....	Apr. 22, 1963	Hon. GEORGE STANLEY WHITE.....	June 25, 1964
Hon. ALLAN JOSEPH MACEachen <sup>2</sup> .....	Apr. 22, 1963	Hon. MAJOR JAMES WILLIAM COLDWELL	June 25, 1964
Hon. JEAN-PAUL DESCHATELETS.....	Apr. 22, 1963	Hon. EDGAR JOHN BENSON <sup>2</sup> .....	June 29, 1964
Hon. HÉDARD ROBICHAUD <sup>2</sup> .....	Apr. 22, 1963	Hon. LÉO ALPHONSE JOSEPH CADIEUX <sup>2</sup> .....	Feb. 15, 1965
Hon. J. WATSON MACNAUGHT.....	Apr. 22, 1963	Hon. LAWRENCE T. PENNELL <sup>2</sup> .....	July 7, 1965
Hon. ROGER TEILLET <sup>2</sup> .....	Apr. 22, 1963	Hon. JEAN-LUC PÉPIN <sup>2</sup> .....	July 7, 1965
Hon. JUDY LAMARSH <sup>2</sup> .....	Apr. 22, 1963	Hon. ALAN AYLESWORTH	
Hon. CHARLES MILLS DRURY <sup>2</sup> .....	Apr. 22, 1963	MACNAUGHTON.....	Oct. 25, 1965
Hon. GUY FAYREAU <sup>2</sup> .....	Apr. 22, 1963	Hon. JEAN MARCHAND <sup>2</sup> .....	Dec. 18, 1965
Hon. JOHN ROBERT NICHOLSON <sup>2</sup> .....	Apr. 22, 1963	Hon. JOHN JAMES GREENE <sup>2</sup> .....	Dec. 18, 1965
Hon. HARRY HAYS.....	Apr. 22, 1963	Hon. JOSEPH JULIEN JEAN-PIERRE CÔTÉ <sup>2</sup>	Dec. 18, 1965
Hon. RENÉ TREMBLAY.....	Apr. 22, 1963	Hon. JOHN NAPIER TURNER <sup>2</sup> .....	Dec. 18, 1965
Hon. ROBERT TASCHEREAU.....	Apr. 26, 1963	Hon. MAURICE BOURGET.....	Feb. 22, 1966

<sup>1</sup> Members of Her Majesty's Privy Council for Canada take rank *inter se* according to the dates of their being sworn in. <sup>2</sup> Ranks as a Member of the Cabinet. <sup>3</sup> Ranks as the Prime Minister of Canada.

### 6.—Duration and Sessions of Parliaments, 1953-66

NOTE.—Similar information for the 1st to the 12th Parliaments, covering the period from Confederation to 1917, is given in the 1940 Year Book, p. 46; that for the 13th to 17th Parliaments in the 1945 edition, p. 53; for the 18th and 19th Parliaments in the 1957-58 edition, p. 46; and for the 20th and 21st Parliaments in the 1965 edition, p. 65.

Order of Parliament <sup>1</sup>	Session	Date of Opening	Date of Prorogation	Days of Session	Sitting Days of House of Commons	Date of Election, Writs Returnable, Dissolution, and Length of Parliament <sup>1,2</sup>
22nd Parliament.....	1st	Nov. 12, 1953	June 26, 1954	227	139	Aug. 10, 1953 <sup>3</sup> Oct. 8, 1953 <sup>4</sup> Apr. 12, 1957 <sup>5</sup> 3 y., 6m., 5 d.
	2nd	Jan. 7, 1955	July 28, 1955	203	140	
	3rd	Jan. 10, 1956	Aug. 14, 1956	218	152	
	4th	Nov. 26, 1956	Jan. 8, 1957	44 <sup>6</sup>	5	
	5th	Jan. 8, 1957	Apr. 12, 1957	95	71	
23rd Parliament.....	1st	Oct. 14, 1957	Feb. 1, 1958	111	78	June 10, 1957 <sup>3</sup> Aug. 8, 1957 <sup>4</sup> Feb. 1, 1958 <sup>5</sup> 5 m., 25 d.
24th Parliament.....	1st	May 12, 1958	Sept. 6, 1958	117	93	Mar. 31, 1958 <sup>3</sup> Apr. 30, 1958 <sup>4</sup> Apr. 19, 1962 <sup>5</sup> 3 y., 11 m., 20 d.
	2nd	Jan. 15, 1959	July 18, 1959	185	127	
	3rd	Jan. 14, 1960	Aug. 10, 1960	210	146	
	4th	Nov. 17, 1960	Sept. 28, 1961	316 <sup>7</sup>	174	
	5th	Jan. 18, 1962	Apr. 18, 1962	91	65	
25th Parliament.....	1st	Sept. 27, 1962	Feb. 5, 1963 <sup>8</sup>	132	72	June 18, 1962 <sup>3</sup> July 18, 1962 <sup>4</sup> Feb. 6, 1963 <sup>5</sup> 6 m., 20 d.
26th Parliament.....	1st	May 16, 1963	Dec. 21, 1963	220 <sup>9</sup>	117	Apr. 8, 1963 <sup>3</sup> May 8, 1963 <sup>4</sup> Sept. 8, 1965 <sup>5</sup> 1y., 5m., 1d.
	2nd	Feb. 18, 1964	Apr. 3, 1965	411 <sup>10</sup>	248	
	3rd	Apr. 5, 1965	Sept. 8, 1965 <sup>11</sup>	157 <sup>12</sup>	53	
27th Parliament.....	1st	Jan. 18, 1966	...	...	...	Nov. 8, 1965 <sup>3</sup> Dec. 9, 1965 <sup>4</sup>

<sup>1</sup> The ordinary legal limit of duration for each Parliament is five years. <sup>2</sup> Duration of Parliament in years, months and days. The life of a Parliament is counted from the date of return of election writs to the date of dissolution, both days inclusive (BNA Act, Sect. 50). <sup>3</sup> Date of general election. <sup>4</sup> Writs returnable. <sup>5</sup> Dissolution of Parliament. <sup>6</sup> Includes long adjournment from Nov. 29, 1956 to Jan. 8, 1957. <sup>7</sup> Includes long adjournment from July 13 to Sept. 7, 1961. <sup>8</sup> Government defeated in House of Commons on want of confidence motion. <sup>9</sup> Includes long adjournment from Aug. 2 to Sept. 30, 1963. <sup>10</sup> Includes long adjournment from Dec. 18, 1964 to Feb. 16, 1965. <sup>11</sup> House adjourned on June 30 until Sept. 27 but dissolved on Sept. 8, 1965. <sup>12</sup> Includes long adjournment from June 30 to Sept. 27, superseded by dissolution on Sept. 8, 1965.

### Subsection 2.—The Legislature

The federal legislative authority is vested in the Parliament of Canada consisting of The Queen, an Upper House styled the Senate, and the House of Commons. Bills may originate in either the Senate or the House subject to the provisions of Sect. 53 of the British North America Act, 1867, which provides that Bills for the appropriation of any part of the public revenue or the imposition of any tax or impost shall originate in the House of Commons. Bills must pass both Houses and receive Royal Assent before becoming law. In practice most public Bills originate in the House of Commons, although there has been a marked increase recently in the introduction of public Bills in the Senate, at the instance of the Government, in order that Bills may be dealt with in the Senate while the Commons is engaged in other matters such as the debate on the Speech from the Throne. Private Bills usually originate in the Senate. The Senate may delay, amend or even refuse to pass Bills sent to it from the Commons, but differences are usually settled without serious conflict. (See Chap. XXVII for current legislation.)

Under Sect. 91 of the British North America Acts, 1867 to 1964, the legislative authority of the Parliament of Canada extends to the following: the amendment of the Constitution of Canada (subject to certain exceptions—see p. 81); the public debt and property; the regulation of trade and commerce; unemployment insurance; the raising of money by any mode or system of taxation; the borrowing of money on the public credit; postal service; the Census and statistics; militia, military and naval service, and defence; the fixing of and providing for the salaries and allowances of civil and other officers of the Government of Canada; beacons, buoys, lighthouses and Sable Island; navigation and shipping; quarantine and the establishment and maintenance of marine hospitals; sea coast and inland fisheries; ferries between a province and any British or foreign country or between two provinces; currency and coinage, banking, incorporation of banks and the issue of paper money; savings banks; weights and measures; bills of exchange and promissory notes; interest; legal tender; bankruptcy and insolvency; patents of invention and discovery; copyrights; Indians and lands reserved for the Indians; naturalization and aliens; marriage and divorce; the criminal law, except the constitution of courts of criminal jurisdiction, but including the procedure in criminal matters; the establishment, maintenance and management of penitentiaries; such classes of subjects as are expressly excepted in the enumeration of the classes of subjects by these Acts assigned exclusively to the legislatures of the provinces.

Under Sect. 95, the Parliament of Canada may make laws in relation to agriculture and immigration concurrently with provincial legislatures although federal legislation is paramount in the event of conflict. By the British North America Act, 1951 (Br. Stat. 1950-51, c. 32) it is declared that the Parliament of Canada may make laws in relation to old age pensions in Canada but no such law shall affect the operation of any provincial laws in relation to old age pensions. By the British North America Act, 1964, which received Royal Assent on July 31, 1964, this amendment was extended, at the request of the Parliament of Canada (June 19, 1964) to permit the payment of supplementary benefits, including survivors' and disability benefits irrespective of age, under a contributory pension plan.

**The Senate.**—From an original membership of 72 at Confederation, the Senate, through the addition of new provinces and the general growth of population, now has 102 members, the latest change in representation having been made on the admission of Newfoundland to Confederation in 1949. The growth of representation in the Senate is summarized by province in Table 7.

Senators are appointed by the Governor General by instrument under the Great Seal of Canada. The actual power of appointing Senators resides by constitutional usage in the Prime Minister whose advice the Governor General accepts in this regard. Until the passage of "An Act to make provision for the retirement of members of the Senate" (SC

1965, c. 4), assented to on June 2, 1965, Senators were appointed for life; that Act fixes at 75 years the age at which any person appointed to the Senate after the coming into force of the Bill will cease to hold his place in the Senate.

In each of the four main divisions of Canada, except Quebec, Senators represent the whole of the province for which they are appointed; in Quebec one Senator is appointed for each of the 24 electoral divisions of what was formerly Lower Canada. The deliberations of the Senate are presided over by a Speaker appointed by the Governor General in Council (in effect by the Government) and government business in the Senate is sponsored by the Government Leader in the Senate.

The Senate is not a competitor of the House of Commons in the field of legislation but, in the main, acts as a second chamber giving further scrutiny to legislation initiated in the House of Commons. Under the Constitution, Bills for appropriating any part of the public revenue or for imposing a tax or impost must originate in the Commons but in every other respect, since both Houses must concur in every piece of legislation, the Senate has an equal voice with the House of Commons.

### 7.—Representation in the Senate since Confederation, 1867

Province	1867	1870	1871	1873	1882	1887	1892	1903	1905	1915- 1948	1949- 1966
Ontario.....	24	24	24	24	24	24	24	24	24	24	24
Quebec.....	24	24	24	24	24	24	24	24	24	24	24
Atlantic Provinces.....	24	24	24	24	24	24	24	24	24	24	30
Nova Scotia.....	12	12	12	10	10	10	10	10	10	10	10
New Brunswick.....	12	12	12	10	10	10	10	10	10	10	10
Prince Edward Island.....	...	...	...	4	4	4	4	4	4	4	4
Newfoundland.....	...	...	...	...	...	...	...	...	...	...	6
Western Provinces.....	...	2	5	5	6	8	9	11	15	24	24
Manitoba.....	...	2	2	2	3	3	4	4	4	6	6
British Columbia.....	...	...	3	3	3	3	3	3	3	6	6
Saskatchewan.....	...	...	...	...	...	2	2	4	4	6	6
Alberta.....	...	...	...	...	...	...	...	...	4	6	6
<b>Totals.....</b>	<b>72</b>	<b>74</b>	<b>77</b>	<b>77</b>	<b>78</b>	<b>80</b>	<b>81</b>	<b>83</b>	<b>87</b>	<b>96</b>	<b>102</b>

### 8.—Members of the Senate, by Province, as at Oct. 1, 1966<sup>1</sup>

Speaker.....	Hon. SYDNEY JOHN SMITH
Leader of the Government.....	Hon. JOHN J. CONNOLLY
Leader of the Opposition.....	Hon. ALFRED J. BROOKS
Clerk of the Senate and Clerk of the Parliaments.....	JOHN FORBES MACNEILL

(Ranked according to seniority, by province. All Senators are entitled to the designation "Honourable".)

Province and Name of Senator	P.O. Address	Province and Name of Senator	P.O. Address
<b>Newfoundland—</b> (6 Senators)		<b>Nova Scotia—</b> (9 Senators—1 vacancy)	
BAIRD, ALEXANDER BOYD.....	St. John's	KINLEY, JOHN JAMES.....	Lunenburg
BASHA, MICHAEL G.....	Curling	ISNOR, GORDON B.....	Halifax
HOLLETT, MALCOLM.....	St. John's	SMITH, DONALD.....	Liverpool
COOK, ERIC.....	St. John's	CONNOLLY, HAROLD.....	Halifax
CARTER, CHESLEY WILLIAM.....	St. John's	BLOIS, FREDERICK MURRAY.....	Truro
DUGGAN, JAMES.....	St. John's	MACDONALD, JOHN MICHAEL.....	North Sydney
<b>Prince Edward Island—</b> (4 Senators)		O'LEARY, CLEMENT AUGUSTINE.....	Antigonish
INMAN, FLORENCE ELSIE.....	Montague	WELCH, FRANK C.....	Wolfville
MACDONALD, JOHN JOSEPH.....	Charlottetown	URQUHART, EARL WALLACE.....	West Bay
PHILLIPS, ORVILLE HOWARD.....	Alberton	<b>New Brunswick—</b> (9 Senators—1 vacancy)	
KICKHAM, THOMAS JOSEPH.....	Souris	McLEAN, ALEXANDER NEIL.....	Saint John

<sup>1</sup> Changes occurring between Oct. 1, 1966 and the date of going to press will be carried in an Appendix to this volume.



## 8.—Members of the Senate, by Province, as at Oct. 1, 1966—concluded

Province and Name of Senator	P.O. Address	Province and Name of Senator	P.O. Address
<b>New Brunswick</b> —concluded		<b>Ontario</b> —concluded	
BURCHILL, GEORGE PERCIVAL.....	South Nelson	SULLIVAN, JOSEPH A.....	Toronto
FERGUSON, MURIEL McQUEEN.....	Fredericton	CHOQUETTE, LIONEL.....	Ottawa
MCGRAND, FRED A.....	Fredericton Jct.	WILLIS, HARRY A.....	Toronto
SAVOIE, CALIXTE F.....	Moncton	McCUTCHEON, M. WALLACE.....	Toronto
BROOKS, ALFRED JOHNSON.....	Sussex	O'LEARY, M. GRATTAN.....	Ottawa
FOURNIER, EDGAR.....	Iroquois	GROSART, ALLISTER.....	Toronto
RATTENBURY, NELSON.....	Saint John	WALKER, DAVID JAMES.....	Sudbury
McELMAN, CHARLES ROBERT.....	Fredericton	BELISLE, RHÉAL.....	Toronto
<b>Quebec</b> —		LANG, DANIEL AIKEN.....	Toronto
(24 Senators)		AIRD, JOHN BLACK.....	Toronto
HUGESSEN, ADRIAN K.....	Montreal	BENDICKSON, WILLIAM MOORE.....	Kenora
GOUIN, LÉON MERCIER.....	Montreal	DAVEY, DOUGLAS KEITH.....	Toronto
VIEU, THOMAS.....	Outremont	<b>Manitoba</b> —	
VAILLANCOURT, CYRILLE.....	Lévis	(5 Senators—1 vacancy)	
DUPUIS, VINCENT.....	Montreal	BEAUBIEN, ARTHUR L.....	St. Jean Baptiste
DESSUREAULT, JEAN-MARIE.....	Quebec	THORVALDSON, GUNNAR S.....	Winnipeg
FOURNIER, SARTO.....	Montreal	IRVINE, OLIVE LILLIAN.....	Winnipeg
MOLSON, HARTLAND DE		HAIG, J. CAMPBELL.....	Winnipeg
MONTARVILLE.....	Montreal	YUZYK, PAUL.....	Winnipeg
POWER, CHARLES GAVAN.....	St. Pacôme	<b>Saskatchewan</b> —	
POULIOT, JEAN-FRANÇOIS.....	Rivière du Loup	(6 Senators)	
LEFRANÇOIS, J. EUGÈNE.....	Montreal	ASELTINE, WALTER M.....	Rosetown
MÉTHOT, LÉON.....	Trois-Rivières	BOUCHER, WILLIAM ALBERT.....	Prince Albert
MONETTE, GUSTAVE.....	Montreal	PEARSON, ARTHUR M.....	Lumsden
QUART, JOSIE ALICE DINAN.....	Quebec	HNATSYHYN, JOHN.....	Saskatoon
BEAUBIEN, LOUIS PHILIPPE.....	Montreal	MCDONALD, ALEXANDER HAMILTON.....	Regina
FLYNN, JACQUES.....	Quebec	ARGUE, HAZEN ROBERT.....	Kayville
BOURGET, MAURICE.....	Lévis	<b>Alberta</b> —	
GÉLINAS, LOUIS P.....	Montreal	(6 Senators)	
BOURQUE, ROMUALD.....	Outremont	GERSHAW, FRED WILLIAM.....	Medicine Hat
DENIS, AZELLUS.....	Montreal	CAMERON, DONALD.....	Edmonton
DESCHATELETS, JEAN-PAUL.....	Montreal	GLADSTONE, JAMES.....	Cardston
MACNAUGHTON, ALAN AYLESWORTH.....	Westmount	HASTINGS, EARL ADAM.....	Calgary
LANGLOIS, J. G. LÉOPOLD.....	Quebec	HAYS, HARRY WILLIAM.....	Calgary
DESRUISSEAUX, PAUL.....	Sherbrooke	PROWSE, JAMES HARPER.....	Edmonton
<b>Ontario</b> —		<b>British Columbia</b> —	
(21 Senators—3 vacancies)		(6 Senators)	
HAYDEN, SALTER ADRIAN.....	Toronto	FARRIS, JOHN WALLACE DE B.....	Vancouver
PATERSON, NORMAN McLEOD.....	Fort William	McKENY, STANLEY STEWART.....	Vancouver
DAVIES, WILLIAM RUPERT.....	Toronto	REID, THOMAS.....	New Westminster
ROBUCK, ARTHUR WENTWORTH.....	Toronto	SMITH, SYDNEY JOHN.....	Kamloops
MACDONALD, WILLIAM ROSS.....	Brantford	MACKENZIE, NORMAN ARCHIBALD.....	Vancouver
CONNOLLY, JOHN J.....	Ottawa	McRAE.....	Vancouver
CROLL, DAVID A.....	Toronto	NICHOL, JOHN LANG.....	Vancouver
LEONARD, THOMAS D'ARCY.....	Toronto		
WHITE, GEORGE STANLEY.....	Madoc		

**The House of Commons.**—The British North America Act, 1867 provided that in respect of representation in the House of Commons the Province of Quebec should have the fixed number of sixty-five members and that there should be assigned to each of the other provinces such a number of members as would bear the same proportion to the number of its population as the number sixty-five bears to the number of the population of Quebec. This Act also provided that on the completion of a census in 1871 and of each subsequent decennial census the representation of the several provinces should be re-adjusted provided the proportionate representation of the provinces as prescribed by the Act were not thereby disturbed.

In the session of 1946 the House of Commons adopted a resolution stating that the effect of the provisions of the British North America Act relating to representation had not been satisfactory in that proportionate representation of the provinces according to population had not been maintained and that a more equitable apportionment of members to the various provinces could be effected if readjustments were made on the basis of the population of all the provinces taken as a whole. The Act was amended accordingly in

1946 to provide a new rule to regulate representation in the House of Commons. Generally speaking, representation was fixed as follows:—

The membership assigned to each province shall be computed by dividing the total population of the provinces by two hundred and fifty-four and by dividing the population of each province by the quotient so obtained.

This rule, employed in the redistribution of representation made in 1947, was effective in the General Election of 1949.

After the completion of the 1951 Census it was apparent that, as a result of a wartime shift of population, a substantial reduction in the representation of the Province of Saskatchewan would ensue under the rules then regulating representation. Accordingly, in an effort to eliminate sharp reductions in provincial representation from one census to another, the British North America Act was again amended (RSC 1952, c. 304, Sect. 51) (see Canada Year Book 1963-64, p. 75) to ensure that the representation of any province should not be reduced by more than 15 p.c. at any one readjustment, subject however to the qualification that the effect of the rule should not be to make the representation of a province with a smaller population greater than any province with a larger population.

Subsequently in 1952, Parliament enacted RSC 1952, c. 334, effective in the General Election of 1953 and in each successive General Election down to that of the Twenty-seventh Parliament (Nov. 8, 1965), which provided that representation in the House of Commons should be on the following basis:—

“Sect. 2.—Eighty-five members of the House of Commons shall be elected for the Province of Ontario, seventy-five for the Province of Quebec, twelve for the Province of Nova Scotia, ten for the Province of New Brunswick, fourteen for the Province of Manitoba, twenty-two for the Province of British Columbia, four for the Province of Prince Edward Island, seventeen for the Province of Saskatchewan, seventeen for the Province of Alberta, seven for the Province of Newfoundland, one for the Yukon Territory and one for Mackenzie district of the Northwest Territories, thus making a total of two hundred and sixty-five members.”

The number of representatives of each province elected at each of the 27 General Elections since Confederation is given in Table 9.

### 9.—Representation in the House of Commons, as at Federal General Elections 1867-1965

Province or Territory	1867	1872	1874 1878	1882	1887 1891	1896 1900	1904	1908 1911	1917 1921	1925 1926 1930	1935 1940 1945	1949	1953 1957 1958 1962 1963 1965
Ontario.....	82	88	88	92	92	92	86	86	82	82	82	83	85
Quebec.....	65	65	65	65	65	65	65	65	65	65	65	73	75
Nova Scotia.....	19	21	21	21	21	20	18	18	16	14	12	13	12
New Brunswick.....	15	16	16	16	16	14	13	13	11	11	10	10	10
Manitoba.....	...	4	4	5	5	7	10	10	15	17	17	16	14
British Columbia.....	...	6	6	6	6	6	7	7	13	14	16	18	22
Prince Edward Island.....	...	...	6	6	6	5	4	4	4	4	4	4	4
Saskatchewan.....	...	...	...	...	4	4	10	10	16	21	21	20	17
Alberta.....	...	...	...	...	...	...	7	12	16	17	17	17	17
Yukon Territory.....	...	...	...	...	...	...	1	1	1	1	1	1	1
Mackenzie River, N.W.T. <sup>1</sup>	...	...	...	...	...	...	...	...	...	...	...	7	7
Newfoundland.....	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Totals.....</b>	<b>181</b>	<b>200</b>	<b>206</b>	<b>211</b>	<b>215</b>	<b>213</b>	<b>214</b>	<b>221</b>	<b>235</b>	<b>245</b>	<b>245</b>	<b>262</b>	<b>265</b>

<sup>1</sup> Northwest Territories in 1963 and 1965.

The Representation Commissioner Act setting up the office and duties of the Representation Commissioner was given Royal Assent on Dec. 21, 1963. The Electoral Boundaries Readjustment Act providing for the establishment of Electoral Boundaries

Commissions to report upon and to provide for the readjustment of the representation of the provinces in the House of Commons in accordance with the findings of the 1961 Census of population was given Royal Assent on Nov. 20, 1964.

Pursuant to Sect. 11 of the Electoral Boundaries Readjustment Act, the Dominion Statistician sent to the Representation Commissioner a certified return showing the population of Canada and of each of the provinces and the population of Canada by electoral districts as ascertained by the 1961 Census. The Representation Commissioner calculated the number of members of the House of Commons to be assigned to each of the provinces subject and according to the provisions of Sect. 51 of the British North America Act, 1867, and the rules provided therein. He then caused a statement to be published in the *Canada Gazette* of Nov. 28, 1964, setting forth the following results:—

“Eighty-eight members of the House of Commons shall be elected for the Province of Ontario, seventy-four for the Province of Quebec, eleven for the Province of Nova Scotia, ten for the Province of New Brunswick, thirteen for the Province of Manitoba, twenty-three for the Province of British Columbia, four for the Province of Prince Edward Island, thirteen for the Province of Saskatchewan, nineteen for the Province of Alberta and seven for the Province of Newfoundland.”

The Governor General, by proclamation published in the *Canada Gazette*, established an Electoral Boundaries Commission for each province. It was the task of each Commission to prepare, with all reasonable dispatch, a report setting forth its recommendations concerning the division of its particular province into electoral districts and the recommendations concerning the description of the boundaries of each such district and the representation and name to be given thereto. A copy of the 1961 Census return was sent to the chairman of each Commission immediately after its members were appointed.

Pursuant to Sect. 8 of the Representation Commissioner Act, maps were prepared in the office of the Representation Commissioner showing the distribution of population in each province and setting out alternative proposals respecting the boundaries of electoral districts in each province; these maps were then supplied to the respective Commissions. The Commissions complied with the procedure of the Electoral Boundaries Act and completed their reports within the time prescribed, which was one year. Two certified copies of each report were received by the Representation Commissioner; as required by Sect. 19(1) of that Act, one of these copies was transmitted to the Speaker of the House of Commons, who in turn laid it before the House of Commons.

Then followed a period of thirty days in which objections in writing, signed by no fewer than ten members of the House of Commons, were filed with the Speaker specifying the provisions of the report objected to and the reasons for the objection. A further period of 15 days was set aside in which the House of Commons was to consider the matter of the objections: this period was increased to 45 sitting days by an Act, assented to on Feb. 23, 1966, entitled “An Act to extend the time for consideration of objections pursuant to section 20 of the Electoral Boundaries Readjustment Act with respect to the reports of commissions established for the decennial census taken in the year 1961”.

Several objections were filed with the Speaker, the motions were taken up and considered and the reports referred back to the Representation Commissioner by the Speaker and then to the Commissions. On the expiration of a 30-day period for that purpose, the Commissions returned their reports with or without amendment, through the Representation Commissioner to the Speaker. Then a draft representation order was prepared by the Representation Commissioner to be transmitted to the Secretary of State. This order specified the number of members of the House of Commons who shall be elected for each of the provinces as calculated by the Representation Commissioner and, dividing each of the provinces into electoral districts, described the boundaries of each such district and specified the representation and name given thereto, in accordance with the recommendations contained in the reports. The Governor in Council, by proclamation of June 16, 1966, declared the draft representation order to be in force, effective upon the dissolution of the then-existing Parliament.



**10.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-seventh General Election, Nov. 8, 1965 and Revised to Oct. 1, 1966**

Speaker.....	Hon. LUCIEN LAMOUREUX
Prime Minister.....	Rt. Hon. LESTER B. PEARSON
Leader of the Opposition.....	Rt. Hon. JOHN G. Diefenbaker
Clerk of the House of Commons.....	LÉON J. RAYMOND

NOTE.—The vote is summarized by provinces in Table 12, p. 102. The leaders of the political parties are indicated by asterisks (\*). For Parliamentary Secretaries, see p. 87. This information, except the population of constituencies, has been supplied by the Chief Electoral Officer. Party affiliations are unofficial. Lib.=Liberal; P.C.=Progressive Conservative; S.C.=Social Credit; N.D.P.=New Democratic Party; R.cr.=Ralliement créditiste; Ind.=Independent. Party standing at General Election of Nov. 8, 1965: 131 Liberal, 97 Progressive Conservative, 21 New Democratic Party, 9 Ralliement créditiste, 5 Social Credit and 2 Independent.

Province and Electoral District	Popu- lation, Census 1961	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affili- ation
	No.	No.	No.	No.			
<b>Newfoundland— (7 members)</b>							
Bonavista-Twillingate..	50,527	24,819	13,866	10,113	Hon. J. W. PICKERSGILL.	Ottawa, Ont.....	Lib.
Burin-Burgoe.....	48,673	23,499	15,253	11,350	C. W. CARTER <sup>1</sup> .....	St. John's.....	Lib.
Grand Falls-White Bay-Labrador.....	82,433	44,208	25,543	17,933	C. R. GRANGER <sup>2</sup> .....	Ottawa, Ont.....	Lib.
Humber-St. George's..	74,015	32,439	22,275	13,855	H. M. BATTEN.....	Corner Brook.....	Lib.
St. John's East.....	77,070	39,362	29,259	16,182	J. P. O'KEEFE.....	St. John's.....	Lib.
St. John's West.....	68,979	33,024	25,503	14,481	R. CASHIN.....	St. John's.....	Lib.
Trinity-Conception...	56,156	28,731	16,693	10,377	J. R. TUCKER.....	St. John's.....	Lib.
<b>Prince Edward Island— (4 members)</b>							
Kings.....	17,893	10,074	9,216	4,591	M. J. McQUAID.....	Souris.....	P.C.
Prince.....	40,894	20,160	17,895	9,082	D. MACDONALD.....	Alberton.....	P.C.
Queens.....	45,842	26,250	44,895	12,588	Hon. J. A. MACLEAN.....	Beaton's Mills.....	P.C.
				12,305	H. MACQUARRIE.....	Victoria.....	P.C.
<b>Nova Scotia— (12 members)</b>							
Antigonish—Guysborough.....	27,634	14,750	12,697	6,210	J. B. STEWART.....	Bayfield.....	Lib.
Cape Breton North and Victoria.....	50,957	25,531	21,469	11,258	R. MUIR.....	Sydney Mines.....	P.C.
Cape Breton South....	85,001	42,190	37,221	13,670	D. MACINNIS.....	Glace Bay.....	P.C.
Colchester-Hants.....	60,751	34,611	29,824	15,250	C. F. KENNEDY.....	Truro.....	P.C.
Cumberland.....	37,767	20,818	18,100	9,560	R. C. COATES.....	Amherst.....	P.C.
Digby-Annapolis-Kings	76,073	39,527	33,708	17,845	J. P. NOWLAN.....	Wolfville.....	P.C.
Halifax.....	225,723	124,633	184,153	46,007	R. McCLEAVE.....	Halifax.....	P.C.
				40,983	J. M. FORRESTALL.....	Waverley.....	P.C.
Inverness-Richmond...	33,907	18,609	15,456	8,137	Hon. A. J. MACEachen.	Inverness.....	Lib.
Pictou.....	43,908	24,703	21,466	11,289	R. MACEWAN.....	New Glasgow...	P.C.
Queens-Lunenburg....	48,153	29,772	23,699	13,556	L. R. CROUSE.....	Lunenburg.....	P.C.
Shelburne-Yarmouth-Clare.....	47,133	26,377	22,353	10,744	J. O. BOWER.....	Shelburne.....	P.C.
<b>New Brunswick— (10 members)</b>							
Charlotte.....	23,285	13,550	11,725	5,879	A. McLEAN.....	Black's Harbour..	Lib.
Gloucester.....	66,343	30,355	23,566	14,121	Hon. H.-J. ROBICHAUD.	Caraquet.....	Lib.
Kent.....	26,667	11,916	9,662	5,713	G. F. CROSSMAN.....	Buctouche.....	Lib.
Northumberland—Miramichi.....	50,035	23,222	18,780	9,564	G. R. McWILLIAM.....	Newcastle.....	Lib.
Restigouche—Madawaska.....	79,956	35,680	27,855	15,211	J.-E. DUBÉ.....	Campbellton....	Lib.
Royal.....	37,548	22,228	17,937	9,865	G. FAIRWEATHER.....	East Riverside...	P.C.
Saint John-Albert....	101,736	56,786	42,940	21,909	T. M. BELL.....	Saint John.....	P.C.
Victoria-Carleton....	43,219	21,579	16,710	9,462	Hon. H. J. FLEMMING....	Juniper.....	P.C.
Westmorland.....	93,679	50,055	42,143	20,768	MARGARET RIDEOUT....	Moncton.....	Lib.
York-Sunbury.....	75,468	39,363	32,866	15,813	J. C. MACRAE.....	Silverwood.....	P.C.

<sup>1</sup> Appointed to Senate July 8, 1966; see Table 11 for by-election.

<sup>2</sup> Resigned Aug. 1, 1966; see Table 11

**10.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-seventh General Election, Nov. 8, 1965 and Revised to Oct. 1, 1966—continued**

Province and Electoral District	Population, Census 1961	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
<b>Quebec—</b>							
(75 members)							
Argenteuil-Deux-Montagnes.....	64,667	36,774	29,994	14,035	R.-E. RÉGIMBAL.....	Lachute.....	P.C.
Beauce.....	61,332	30,977	25,799	10,530	J.-P. RACINE.....	St. Honoré de Shenley.....	Lib.
Beauharnois-Salaberry.....	70,191	42,254	32,780	16,145	G. LANIEL.....	Salaberry de Valleyfield.....	Lib.
Bellechasse.....	32,513	15,902	11,772	4,783	H. LAVERDIÈRE.....	St. Lazare.....	Lib.
Berthier-Maskinongé-Delanaudière.....	48,749	26,189	18,127	7,868	A. YANAKIS.....	St. Gabriel de Brandon.....	Lib.
Bonaventure.....	42,962	20,971	16,441	8,985	A. BÉCHARD.....	Carleton sur Mer.....	Lib.
Brome-Missisquoi.....	43,217	25,095	19,562	9,662	H. GRAFFEY.....	Knowlton.....	P.C.
Chambly-Rouville.....	60,959	37,198	24,839	14,377	B. PILON.....	Belœil.....	Lib.
Champlain.....	63,086	33,452	26,170	12,334	J.-P. MATTE.....	St. Tite.....	Lib.
Chapleau.....	71,394	35,897	26,000	15,402	G. LAPRISE.....	LaSarre.....	R.c.r.
Charlevoix.....	48,906	24,486	19,876	6,844	Hon. M. ASSELIN.....	La Malbaie.....	P.C.
Châteauguay-Huntingdon-Laprairie.....	61,729	38,707	23,268	14,222	I. WATSON.....	Howick.....	Lib.
Chicoutimi.....	83,635	39,042	29,975	11,092	P. LANGLOIS.....	Chicoutimi.....	Lib.
Compton-Frontenac.....	42,366	19,790	15,140	7,240	H. LATULPPE.....	Lac Mégantic.....	R.c.r.
Dorchester.....	38,953	18,011	12,872	4,602	G. CÔTÉ.....	Ste. Claire.....	Lib.
Drummond-Arthabaska.....	89,851	48,784	39,191	15,179	Hon. J.-L. PÉPIN.....	Drummondville.....	Lib.
Caspé.....	65,300	28,654	22,901	11,045	J.-R. KEAYS.....	Gaspé.....	P.C.
Gatineau.....	58,771	33,735	24,818	13,088	G. ISABELLE.....	Aylmer East.....	Lib.
Hull.....	86,563	44,816	32,988	17,832	A. CARON <sup>1</sup> .....	Hull.....	Lib.
Îles-de-la-Madeleine.....	12,479	5,782	5,430	2,860	Hon. M. SAUVÉ.....	Outremont.....	Lib.
Joliette-L'Assomption-Montcalm.....	102,717	59,084	38,815	15,221	J.-R. COMTOIS.....	Repentigny.....	Lib.
Kamouraska.....	35,312	17,694	12,187	6,127	C.-E. DIONNE.....	St. Pascal.....	R.c.r.
Labelle.....	45,701	22,103	15,815	6,554	G. CLERMONT.....	Thurso.....	Lib.
Lac-Saint-Jean.....	48,149	21,547	17,906	5,642	A. SIMARD.....	Alma.....	R.c.r.
Lapointe.....	74,408	33,704	26,999	13,210	G. GRÉGOIRE.....	Jonquière.....	R.c.r.
Lévis.....	49,047	29,479	24,407	10,895	R. GUAY.....	Lauzon.....	Lib.
Longueuil.....	107,318	63,467	39,430	21,578	Hon. J.-P. CÔTÉ.....	Longueuil.....	Lib.
Lotbinière.....	38,529	17,847	15,072	6,238	A. CHOQUETTE.....	Laurier Station.....	Lib.
Matapédia-Matane.....	67,226	27,557	20,394	10,435	Hon. R. TREMBLAY.....	Quebec.....	Lib.
Mégantic.....	70,064	32,844	25,231	11,195	R. LANGLOIS.....	Thetford Mines.....	R.c.r.
Montmagny-L'Islet.....	40,987	20,773	14,815	6,389	J. BERGER.....	L'Islet.....	Lib.
Nicolet-Yamaska.....	45,192	24,195	18,625	11,734	C. VINCENT <sup>2</sup> .....	Ste. Perpétue.....	P.C.
Pontiac-Témiscamingue.....	41,069	20,868	16,984	6,593	T. LEFEBVRE.....	Témiscamingue.....	Lib.
Portneuf.....	48,137	25,834	19,680	6,539	R. GODIN.....	Les Écureuils.....	R.c.r.
Quebec East.....	92,170	54,124	41,860	18,900	G. DUQUET.....	Quebec.....	Lib.
Quebec South.....	54,535	34,323	26,933	16,141	J.-C. CANTIN.....	Quebec.....	Lib.
Quebec West.....	57,763	33,043	26,032	10,669	Hon. J. MARCHAND.....	Quebec.....	Lib.
Quebec-Montmorency.....	138,030	90,056	66,942	30,084	O. LAFLAMME.....	Ste. Foy.....	Lib.
Richelieu-Verchères.....	60,832	38,224	26,514	15,697	Hon. L.-J.-L. CARDIN.....	Ste. Anne de Sorel.....	Lib.
Richmond-Wolfe.....	60,534	28,315	21,557	8,685	P.-T. ASSELIN.....	Bromptonville.....	Lib.
Rimouski.....	75,076	35,962	27,177	11,372	G. LEBLANC.....	Rimouski.....	Lib.
Rivière-du-Loup-Témiscouata.....	58,909	26,641	20,829	11,025	R. GENDRON.....	Rivière du Loup.....	Lib.
Roberval.....	56,234	24,574	19,794	8,736	C.-A. GAUTHIER.....	Mistassini.....	R.c.r.
Saint-Hyacinthe-Bagot.....	63,942	37,133	28,811	15,127	Hon. J.-H.-T. RICARD.....	St. Hyacinthe.....	P.C.
Saint-Jean-Iderville-Napierville.....	65,464	35,528	29,113	12,510	P. BEAULIEU.....	St. Jean.....	P.C.
Saint-Maurice-Lafleche.....	88,296	44,121	32,970	14,395	J. CHRÉTEN.....	Shawinigan.....	Lib.
Saguenay.....	81,097	56,624	33,424	15,062	G. BLOUIN.....	Sept Îles.....	Lib.
Shefford.....	67,962	36,900	29,350	9,494	L.-P. NEVEU.....	Granby.....	Lib.
Sherbrooke.....	73,417	44,432	33,584	11,808	M. ALLARD.....	Sherbrooke.....	Ind. P.C.
Stanstead.....	43,309	24,122	18,360	7,626	Y. FOREST.....	Magog.....	Lib.
Terrebonne.....	102,450	61,662	38,641	16,806	Hon. L. CADIEUX.....	St. Antoine des Laurentides.....	Lib.

<sup>1</sup> Died Aug. 31, 1966; see Appendix for by-election.

<sup>2</sup> Resigned May 4, 1966; see Table 11 for by-election.

**10.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-seventh General Election, Nov. 8, 1965 and Revised to Oct. 1, 1966—continued**

Province and Electoral District	Population, Census 1961	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
<b>Quebec—concluded</b>							
Trois-Rivières.....	68,854	40,700	32,137	12,927	J.-A. MONGRAIN.....	Trois-Rivières.....	Ind.
Vaudreuil-Soulanges.....	38,756	23,319	17,851	8,955	R. ÉMARD.....	Île Perrot.....	Lib.
Villeneuve.....	79,675	36,584	28,972	19,839	R. CAOUETTE*.....	Rouyn.....	R.c.
<b>Montreal and Jesus Islands—</b>							
Cartier.....	51,819	18,261	11,047	5,389	M. L. KLEIN.....	Montreal.....	Lib.
Dollard.....	107,394	60,919	42,200	22,496	J.-P. COYER.....	St. Laurent.....	Lib.
Hochelaga.....	79,912	45,314	25,539	11,929	G. PELLETER.....	Westmount.....	Lib.
Jacques-Cartier—							
Lasalle.....	163,148	109,535	79,490	44,251	R. ROCK.....	Lachine.....	Lib.
Lafontaine.....	50,325	29,703	19,331	9,101	G.-C. LACHANCE.....	Montreal.....	Lib.
Laurier.....	45,652	25,155	13,356	7,032	F.-E. LEBLANC.....	Montreal.....	Lib.
Laval.....	193,437	137,190	90,057	44,533	J.-L. ROCHON.....	Montreal.....	Lib.
Maisonneuve—							
Rosemont.....	108,023	66,709	39,772	17,663	J.-A. THOMAS.....	Montreal.....	Lib.
Mercier.....	233,964	146,201	86,346	39,205	P. BOULANGER.....	Montreal.....	Lib.
Mont-Royal.....	128,524	76,942	51,287	28,064	P.-E. TRUDEAU.....	Montreal.....	Lib.
Notre-Dame-de-Grâce.....	100,719	59,776	43,816	17,796	W. ALLMAND.....	Montreal.....	Lib.
Outremont-Saint-Jean.....	63,888	32,957	20,515	11,855	Hon. M. LAMONTAGNE.....	Montreal.....	Lib.
Papineau.....	87,588	47,504	27,036	13,920	Hon. G. FAVREAU.....	Montreal.....	Lib.
St. Ann.....	38,173	16,515	10,573	6,150	G. LOISELLE.....	Montreal.....	Lib.
Saint-Antoine—							
Westmount.....	59,609	35,560	23,906	13,378	Hon. C. M. DRURY.....	Westmount.....	Lib.
Saint-Denis.....	65,090	35,024	21,734	11,000	M. PRUD'HOMME.....	Montreal.....	Lib.
Saint-Henri.....	71,691	37,718	24,924	12,310	H.-P. LESSARD.....	Montreal.....	Lib.
Saint-Jacques—	54,679	28,328	16,429	7,023	M. RINFRET.....	Montreal.....	Lib.
St. Lawrence—							
St. George.....	34,020	19,255	11,693	6,920	Hon. J. N. TURNER.....	Montreal.....	Lib.
Sainte-Marie.....	56,455	28,973	17,941	9,672	G.-J. VALADE.....	Montreal.....	P.C.
Verdun.....	78,317	45,593	31,148	18,072	B. S. MACKASEY.....	Verdun.....	Lib.
<b>Ontario—</b>							
(85 members)							
Algoma East.....	54,868	22,807	17,307	9,268	Rt. Hon. L. B. PEARSON*.....	Ottawa.....	Lib.
Algoma West.....	80,542	43,564	33,817	12,034	G. E. NIXON.....	Sault Ste. Marie.....	Lib.
Brantford.....	54,392	31,231	24,356	9,948	J. E. BROWN.....	Brantford.....	Lib.
Brant-Haldimand.....	57,644	34,140	26,065	13,179	Hon. L. T. PENNELL.....	Brantford.....	Lib.
Bruce.....	29,334	17,075	13,818	6,846	J. LONEY.....	Tiverton.....	P.C.
Carleton.....	130,497	89,318	74,342	32,456	Hon. R. A. BELL.....	Bells Corners.....	P.C.
Cochrane.....	47,854	24,535	18,511	7,505	J.-A. HABEL.....	Kapuskasing.....	Lib.
Dufferin-Simcoe.....	53,226	27,109	20,712	9,701	J. E. MADILL.....	Orangeville.....	P.C.
Durham.....	39,916	23,099	19,037	8,017	R. C. HONEY.....	Port Hope.....	Lib.
Elgin.....	62,862	33,952	27,965	13,343	H. E. STAFFORD.....	St. Thomas.....	Lib.
Essex East.....	99,432	56,353	41,589	26,094	Hon. P. MARTIN.....	Windsor.....	Lib.
Essex South.....	55,816	30,898	24,537	12,887	E. F. WHELAN.....	Amherstburg.....	Lib.
Essex West.....	101,526	57,425	38,969	21,525	H. GRAY.....	Windsor.....	Lib.
Fort William.....	57,642	31,978	26,334	12,432	H. BADANAI.....	Fort William.....	Lib.
Glenagarry-Prescott.....	46,443	24,335	19,471	10,339	V. ETHIER.....	Glen Robertson.....	Lib.
Grenville-Dundas.....	40,026	22,980	17,549	9,845	JEAN WADDS.....	Prescott.....	P.C.
Grey-Bruce.....	36,883	21,807	17,631	10,138	E. A. WINKLER.....	Hanover.....	P.C.
Grey North.....	38,824	22,812	18,806	9,222	P. V. NOBLE.....	Shallow Lake.....	P.C.
Halton.....	107,285	67,263	53,120	25,213	H. C. HARLEY.....	Oakville.....	Lib.
Hamilton East.....	65,287	35,053	26,118	12,692	J. C. MUNRO.....	Hamilton.....	Lib.
Hamilton South.....	121,161	70,402	54,632	22,736	W. D. HOWE.....	Hamilton.....	N.D.P.
Hamilton West.....	72,131	41,997	30,939	13,247	J. MACALUSO.....	Hamilton.....	Lib.
Hastings-Frontenac.....	48,217	25,305	17,744	11,290	R. WEBB.....	Norwood.....	P.C.
Hastings South.....	70,806	36,943	30,978	14,824	L. GRILLS.....	Belleville.....	P.C.
Huron.....	48,355	25,551	21,680	10,670	R. E. MCKINLEY.....	Zurich.....	P.C.
Kenora-Rainy River.....	72,775	36,558	26,194	11,488	J. M. REID.....	Kenora.....	Lib.
Kent.....	71,285	40,090	30,712	15,472	H. W. DANFORTH.....	Blenheim.....	P.C.
Kingston.....	76,485	42,993	32,563	16,022	Hon. E. J. BENSON.....	Kingston.....	Lib.
Lambton-Kent.....	43,235	24,523	19,914	10,303	M. T. MCCUTCHEON.....	Florence.....	P.C.
Lambton West.....	78,482	42,976	32,643	12,805	W. F. FOY.....	Sarnia.....	Lib.
Lanark.....	40,081	22,511	17,886	9,784	D. M. CODE.....	Smiths Falls.....	P.C.
Leeds.....	47,121	27,466	21,580	10,365	J. MATHESON.....	Brockville.....	Lib.



**10.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-seventh General Election, Nov. 8, 1965 and Revised to Oct. 1, 1966—continued**

Province and Electoral District	Population, Census 1961	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
No.	No.	No.	No.	No.			
<b>Ontario—concluded</b>							
Lincoln.....	126,674	75,678	55,957	25,820	J. C. McNULTY.....	St. Catharines.....	Lib.
London.....	73,970	41,756	30,439	13,763	J. IRVINE.....	London.....	P.C.
Middlesex East.....	101,721	63,281	47,510	17,075	J. LIND.....	London.....	Lib.
Middlesex West.....	45,731	26,725	21,425	9,768	W. H. A. THOMAS.....	Strathroy.....	P.C.
Niagara Falls.....	78,010	43,487	30,078	17,794	HON. JUDY LAMARSH.....	Niagara Falls.....	Lib.
Nickel Belt.....	76,307	35,706	26,555	10,863	N. FAWCETT.....	Capreol.....	N.D.P.
Nipissing.....	68,173	35,179	24,579	14,025	C. LEGAULT.....	Sturgeon Falls.....	Lib.
Norfolk.....	50,475	27,278	21,669	9,833	J. M. ROXBURGH.....	Simcoe.....	Lib.
Northumberland.....	42,768	25,314	22,095	10,876	Hon. G. HEES.....	Cobourg.....	P.C.
Ontario.....	125,784	78,795	61,195	22,752	Hon. M. STARR.....	Oshawa.....	P.C.
Ottawa East.....	51,828	29,289	21,975	15,107	J.-T. RICHARD.....	Ottawa.....	Lib.
Ottawa West.....	67,131	35,635	26,444	14,945	Hon. G. McILRAITH.....	Ottawa.....	Lib.
Oxford.....	70,499	39,687	32,015	17,657	W. NESBITT.....	Woodstock.....	P.C.
Parry Sound—Muskoka.....	55,898	31,769	22,652	11,777	G. AIKEN.....	Gravenhurst.....	P.C.
Peel.....	111,575	80,614	61,636	29,057	B. S. BEER.....	Brampton.....	Lib.
Perth.....	55,816	33,280	24,833	13,558	Hon. J. W. MONTEITH.....	Stratford.....	P.C.
Peterborough.....	67,969	39,989	33,540	12,335	H. FAULKNER.....	Lakefield.....	Lib.
Port Arthur.....	87,977	44,998	35,340	14,706	R. ANDRAS.....	Port Arthur.....	Lib.
Prince Edward—Lennox.....	37,758	21,378	16,591	9,064	D. ALKENBRACK.....	Napanee.....	P.C.
Renfrew North.....	55,616	25,871	21,717	10,882	L. D. HOPKINS.....	Petawawa.....	Lib.
Renfrew South.....	35,929	19,837	17,140	8,932	Hon. J. GREENE.....	Arnprior.....	Lib.
Russell.....	124,368	68,869	52,375	28,997	P. TARDIF.....	Ottawa.....	P.C.
Simcoe East.....	58,773	31,373	24,697	11,648	P. B. RYNARD.....	Orillia.....	Lib.
Simcoe North.....	46,377	27,502	21,039	9,513	H. SMITH.....	Barrie.....	P.C.
Stormont.....	57,867	31,025	24,404	13,530	Hon. L. LAMOREUX.....	Cornwall.....	Lib.
Sudbury.....	73,945	39,163	29,898	13,247	R. MITCHELL.....	Sudbury.....	Lib.
Timiskaming.....	50,654	25,142	19,821	9,986	A. PETERS.....	New Liskeard.....	N.D.P.
Timmins.....	48,956	24,584	19,491	10,071	M. MARTIN.....	Timmins.....	N.D.P.
Victoria.....	48,789	29,024	23,529	11,282	W. C. SCOTT.....	Kimount.....	P.C.
Waterloo North.....	115,579	74,097	53,970	24,733	K. R. HYMMEN.....	Kitchener.....	Lib.
Waterloo South.....	61,175	37,292	29,138	13,337	M. SALTSMAN.....	Galt.....	N.D.P.
Welland.....	86,731	49,138	36,027	17,869	D. R. TOLMIE.....	Welland.....	Lib.
Wellington—Huron.....	32,638	18,718	14,610	7,792	M. HOWE.....	Arthur.....	P.C.
Wellington South.....	59,150	35,102	29,323	11,264	A. D. HALES.....	Guelph.....	P.C.
Wentworth.....	99,940	61,530	48,249	17,746	J. MORISON.....	Dundas.....	Lib.
York Centre.....	190,405	122,055	90,578	41,553	J. E. WALKER.....	Downsview.....	Lib.
York East.....	89,709	62,896	47,840	18,840	S. OTTO.....	Toronto.....	Lib.
York—Humber.....	90,618	56,043	41,984	17,172	R. B. COWAN.....	Toronto.....	Lib.
York North.....	100,874	59,708	45,516	18,207	J. ADDISON.....	King.....	Lib.
York—Scarborough.....	267,252	190,698	148,608	58,501	R. STANBURY.....	Willowdale.....	Lib.
York South.....	114,867	61,883	46,776	21,693	D. LEWIS.....	Toronto.....	N.D.P.
York West.....	162,604	117,925	92,469	43,807	Hon. R. H. WINTERS.....	Toronto.....	Lib.
<b>City of Toronto—</b>							
Broadview.....	56,982	29,256	20,973	8,232	J. GILBERT.....	Toronto.....	N.D.P.
Danforth.....	88,988	51,709	39,913	19,320	R. SCOTT.....	Scarborough.....	N.D.P.
Davenport.....	64,520	23,987	17,256	9,887	Hon. W. L. GORDON.....	Toronto.....	Lib.
Eglinton.....	70,470	50,224	41,519	18,719	Hon. M. SHARP.....	Toronto.....	Lib.
Greenwood.....	58,548	29,853	22,344	10,590	A. BREWIN.....	Toronto.....	N.D.P.
High Park.....	60,630	30,450	22,819	11,171	A. J. P. CAMERON.....	Toronto.....	Lib.
Parkdale.....	59,145	33,876	23,613	11,974	S. HAJDASZ.....	Toronto.....	Lib.
Rosedale.....	56,015	30,835	22,117	9,757	D. S. MACDONALD.....	Toronto.....	Lib.
St. Paul's.....	53,155	36,548	25,521	12,251	I. G. WAHN.....	Toronto.....	Lib.
Spadina.....	83,424	34,583	23,552	12,005	P. RYAN.....	Toronto.....	Lib.
Trinity.....	64,902	24,152	17,349	9,897	Hon. P. HELLYER.....	Toronto.....	Lib.
<b>Manitoba—</b>							
(14 members)							
Brandon—Souris.....	65,036	37,233	28,717	15,554	Hon. W. G. DINSDALE.....	Brandon.....	P.C.
Churchill.....	54,952	29,339	21,320	10,773	R. SIMPSON.....	Flin Flon.....	P.C.
Dauphin.....	40,179	22,003	16,535	6,545	R. E. FORBES.....	Dauphin.....	P.C.
Lisgar.....	46,397	24,474	17,572	8,988	G. MUIR.....	Roland.....	P.C.
Marquette.....	47,855	24,536	20,509	10,613	N. MANDZIUK.....	Oakburn.....	P.C.
Portage—Neepawa.....	57,958	35,095	25,410	13,043	S. J. ENNS.....	Portage la Prairie.....	P.C.
Provencher.....	40,314	20,565	13,545	6,470	W. H. JORGENSEN.....	Morris.....	P.C.
St. Boniface.....	76,524	46,120	33,584	13,941	Hon. R. TILLET.....	St. Boniface.....	Lib.
Selkirk.....	50,320	26,195	18,597	8,573	E. STEFANSON.....	Gimli.....	P.C.

**10.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-seventh General Election, Nov. 8, 1965 and Revised to Oct. 1, 1966—continued**

Province and Electoral District	Population, Census 1961	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
No.	No.	No.	No.	No.			
<b>Manitoba—concluded</b>							
Springfield.....	48,343	27,379	20,599	8,001	E. SCHREYER.....	East St. Paul.....	N.D.P.
Winnipeg North.....	116,266	66,548	48,652	22,950	D. ORLIKOW.....	West Kildonan.....	N.D.P.
Winnipeg North Centre.....	78,615	39,517	25,821	14,056	S. H. KNOWLES.....	Winnipeg.....	N.D.P.
Winnipeg South.....	113,629	68,738	54,669	23,576	L. R. SHERMAN.....	Winnipeg.....	P.C.
Winnipeg South Centre.....	85,288	50,186	36,832	15,296	Hon. G. CHURCHILL.....	Winnipeg.....	P.C.
<b>Saskatchewan—</b>							
(17 members)							
Assiniboia.....	45,553	23,836	20,567	7,913	L. WATSON.....	Avonlea.....	P.C.
Humboldt-Melfort-Tisdale.....	48,243	25,510	20,665	11,256	R. RAPP.....	Spalding.....	P.C.
Kindersley.....	47,960	24,359	20,609	9,223	R. W. CANTELON.....	Unity.....	P.C.
Mackenzie.....	44,479	22,380	17,184	9,760	S. J. KORCHINSKI.....	Rama.....	P.C.
Meadow Lake.....	37,937	17,801	12,893	6,919	A. C. CADIEU.....	Spiritwood.....	P.C.
Melville.....	40,255	23,632	19,103	8,843	J. N. ORMISTON.....	Cupar.....	P.C.
Moose Jaw-Lake Centre.....	81,960	51,060	40,107	18,087	J. E. PASCOE.....	Moose Jaw.....	P.C.
Moose Mountain.....	44,404	23,560	19,170	8,781	R. R. SOUTHAM.....	Gainsborough.....	P.C.
Prince Albert.....	58,493	31,329	24,183	15,635	Rt. Hon. J. G. DIEFENBAKER*.....	Prince Albert.....	P.C.
Qu'Appelle.....	39,362	21,041	16,767	9,579	Hon. A. HAMILTON.....	Indian Head.....	P.C.
Regina City.....	89,293	48,936	38,517	15,437	K. MORE.....	Regina.....	P.C.
Rosetown-Biggar.....	47,208	24,888	20,645	8,658	R. D. McLELLAND.....	Loreburn.....	P.C.
Rosthern.....	46,954	23,785	18,170	10,042	E. NASSERDEN.....	Saskatoon.....	P.C.
Saskatoon.....	95,575	60,689	47,447	21,036	L. BRAND.....	Saskatoon.....	P.C.
Swift Current-Maple Creek.....	56,528	31,157	25,245	11,227	J. McINTOSH.....	Swift Current.....	P.C.
The Battlefords.....	51,613	26,394	21,025	10,297	A. HORNER.....	Blaine Lake.....	P.C.
Yorkton.....	49,364	28,376	22,334	10,561	G. D. CLANCY.....	Raymore.....	P.C.
<b>Alberta—</b>							
(17 members)							
Acadia.....	47,724	24,130	18,979	10,813	J. HORNER.....	Pollockville.....	P.C.
Athabasca.....	59,184	28,622	21,690	11,652	J. BIGG.....	Westlock.....	P.C.
Battle River-Camrose.....	58,655	31,508	24,293	14,015	C. S. SMALLWOOD.....	Irma.....	P.C.
Bow River.....	62,806	32,433	23,885	12,611	E. M. WOOLLIAMS.....	Calgary.....	P.C.
Calgary North.....	134,783	77,284	55,335	23,810	Hon. D. S. HARKNESS.....	Calgary.....	P.C.
Calgary South.....	124,248	74,469	53,274	20,640	H. R. BALLARD.....	Calgary.....	P.C.
Edmonton East.....	82,246	45,609	30,509	13,596	W. SKOREYKO.....	Edmonton.....	P.C.
Edmonton-Strathcona.....	121,124	71,989	55,646	21,004	T. NUGENT.....	Edmonton.....	P.C.
Edmonton West.....	150,257	85,373	62,457	30,548	Hon. M. LAMBERT.....	Edmonton.....	P.C.
Jasper-Edson.....	70,088	35,127	25,492	14,909	H. M. HORNER.....	Barrhead.....	P.C.
Lethbridge.....	69,175	32,522	24,877	10,147	D. R. GUNDLOCK.....	Lethbridge.....	P.C.
Macleod.....	50,966	25,291	19,722	8,706	L. E. KINDT.....	Nanton.....	P.C.
Medicine Hat.....	63,450	33,109	25,336	12,997	H. A. OLSON.....	Medicine Hat.....	S.C.
Peace River.....	75,811	40,610	27,874	14,960	G. BALDWIN.....	Peace River.....	P.C.
Red Deer.....	63,205	34,511	23,370	12,383	R. N. THOMPSON*.....	Red Deer.....	S.C.
Vegreville.....	42,798	23,109	17,524	12,163	F. J. W. FANE.....	Vegreville.....	P.C.
Wetaskiwin.....	55,424	28,751	21,607	10,754	H. A. MOORE.....	Wetaskiwin.....	P.C.
<b>British Columbia—</b>							
(22 members)							
Burnaby-Coquitlam.....	90,941	55,653	42,974	22,553	T. C. DOUGLAS*.....	Burnaby.....	N.D.P.
Burnaby-Richmond.....	96,835	56,709	44,451	19,758	R. W. PRITTEE.....	Burnaby.....	N.D.P.
Cariboo.....	82,173	48,986	33,067	12,344	B. R. LEBOE.....	Prince George.....	S.C.
Coast-Capilano.....	113,734	71,890	54,721	26,472	J. DAVIS.....	West Vancouver.....	Lib.
Comox-Alberni.....	71,886	41,616	29,937	13,393	T. S. BARNETT.....	Alberni.....	N.D.P.
Esquimalt-Saanich.....	74,979	48,209	38,514	14,787	G. L. CHATTERTON.....	Saanich.....	P.C.
Fraser Valley.....	88,518	46,956	36,341	12,611	A. B. PATTERSON.....	Abbotsford.....	S.C.
Kamloops.....	73,446	42,240	31,559	11,731	Hon. E. D. FULTON.....	Kamloops.....	P.C.
Kootenay East.....	41,449	22,473	17,723	5,574	J. BYRNE.....	Kimberley.....	Lib.
Kootenay West.....	57,136	31,675	21,870	8,481	H. W. HERRIDGE.....	Nakusp.....	N.D.P.
Nanaimo-Cowichan-The Islands.....	59,786	36,349	27,371	12,337	C. CAMERON.....	Lantzville.....	N.D.P.
New Westminster.....	142,803	84,183	63,661	27,574	B. MATHER.....	Ladner.....	N.D.P.
Okanagan Boundary.....	66,180	39,767	30,971	9,499	D. V. PUGH.....	Oliver.....	P.C.

**10.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-seventh General Election, Nov. 8, 1965 and Revised to Oct. 1, 1966—concluded**

Province or Territory and Electoral District	Population, Census 1961	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
<b>British Columbia—concluded</b>							
Okanagan-Revelstoke..	36,009	20,677	15,758	4,294	H. JOHNSTON.....	Salmon Arm .....	S.C.
Skeena.....	58,740	29,925	21,592	11,477	F. HOWARD.....	Terrace.....	N.D.P.
Vancouver-Burrard ..	60,347	40,005	28,186	10,807	R. BASFORD.....	Vancouver.....	Lib.
Vancouver Centre.....	44,920	34,615	22,793	9,008	Hon. J. R. NICHOLSON..	Vancouver.....	Lib.
Vancouver East.....	59,496	31,080	21,078	11,854	H. E. WINCH.....	Vancouver.....	N.D.P.
Vancouver-Kingsway ..	67,228	38,224	28,245	13,730	GRACE MACINNIS.....	Vancouver.....	N.D.P.
Vancouver Quadra .....	69,981	41,058	33,414	12,895	G. DEACHMAN.....	Vancouver.....	Lib.
Vancouver South.....	86,069	55,548	43,163	18,669	Hon. A. LAING.....	Vancouver.....	Lib.
Victoria.....	86,426	54,215	44,049	13,930	D. W. GROOS.....	Victoria.....	Lib.
<b>Yukon Territory—(1 member)</b>							
Yukon.....	14,628	6,660	5,760	3,134	ERIK NIELSEN.....	Whitehorse.....	P.C.
<b>Northwest Territories—(1 member)</b>							
Northwest Territories..	22,998	12,326	9,403	5,194	R. J. ORANGE.....	Yellowknife .....	Lib.

**11.—By-elections from the Date of the Twenty-seventh General Election, Nov. 8, 1965 to Oct. 1, 1966<sup>1</sup>**

Electoral District and Province	Date of By-election	Name of New Member	P.O. Address	Party Affiliation
Burin-Burgeo, Nfld.....	Sept. 19, 1966	DON JAMIESON.....	Swift Current.....	Lib.
Grand Falls-White Bay-Labrador, Nfld.....	Sept. 19, 1966	ANDREW CHATWOOD.....	Wabush.....	Lib.
Nicolet-Yamaska, Que.....	Sept. 19, 1966	FLORIAN CÔTÉ.....	Ste-Brigitte-des-Saults.....	Lib.

<sup>1</sup> By-elections held between Oct. 1, 1966 and the date of going to press will be carried in an Appendix to this volume.

**Indemnities and Allowances.**—Members of the Senate and House of Commons receive a sessional allowance at the rate of \$12,000 per annum. In addition, for each session of Parliament, they may be paid travelling expenses between their place of residence or constituency and Ottawa as may be required for the performance of their duties as members of the Senate and House of Commons. Senators receive an annual expense allowance of \$3,000 and members of Parliament receive an expense allowance of \$6,000, neither of which is subject to income tax, and is payable quarterly. The member of the Senate occupying the recognized position as Leader of the Government in the Senate is paid, in addition to his sessional allowance, an annual allowance of \$10,000 and to the member of the Senate occupying the recognized position as Opposition Leader in the Senate there is paid, in addition to his sessional allowance, an annual allowance of \$6,000; but if the Leader of the Government is in receipt of a salary under the Salaries Act the annual allowance is not paid. The remuneration of the Prime Minister is \$25,000 a year and of a Cabinet Minister and the Leader of the Opposition in the House of Commons \$15,000 a year in addition to the sessional and expense allowances each receives as a mem-



ber of Parliament. The remuneration of a Minister without Portfolio is \$7,500 a year in addition to the sessional and expense allowances, the latter being not taxable. Additional annual allowances of \$4,000 (beyond the above-noted sessional allowance) are provided to each Leader of a Party having a recognized membership of twelve or more persons in the House of Commons other than the Prime Minister and the member occupying the recognized position as Leader of the Opposition in the House of Commons and, likewise, to the Chief Government Whip and to the Chief Opposition Whip in the House of Commons. The Speaker of the Senate and the Speaker of the House of Commons each receives, besides the sessional allowance and expense allowance, a salary of \$9,000 per annum. The Deputy Speaker of the House of Commons receives a salary of \$6,000 per annum. The Speakers of the Senate and the House of Commons are also entitled to \$3,000 in lieu of residence and the Deputy Speaker of the House of Commons an allowance of \$1,500 in lieu of residence; these allowances are not taxable. The Deputy Chairman of Committees receives an annual allowance of \$4,000. Parliamentary Secretaries to the Ministers of the Crown receive an annual allowance of \$4,000 a year, in addition to their sessional and expense allowances. A motor vehicle allowance of \$2,000 is paid to each Minister of the Crown and to the recognized Leader of the Opposition in the House of Commons, and a motor vehicle allowance of \$1,000 is paid to the Speakers of the Senate and of the House of Commons; these allowances are not taxable.

A member of Parliament contributes, by reservation, 6 p.c. of his full sessional indemnity toward his retirement allowance, which is based on five twelfths of the total contributions, paid or elected to be paid; to the widow of an ex-member is paid three fifths of the allowance paid or payable to the ex-member at the time of his death. The maximum allowance payable to an ex-member is \$9,000 per annum and the maximum payable to the widow of an ex-member is \$5,400 per annum.

An Act to make provision for the retirement of members of the Senate (SC 1965, c. 4) entitles a Senator appointed after June 2, 1965 to become a contributor under the provisions of the Members of Parliament Retiring Act. Senators appointed prior to that date and who have not attained the age of 75 years, who elect under the provisions of this Act, are also entitled to become contributors. Under the provisions of the Retirement Act, a Senator contributes, by reservation, 6 p.c. of his sessional indemnity to the Consolidated Revenue Fund. A Senator appointed before June 2, 1965 who (a) within one year of attaining the age of 75 years resigns his place in the Senate or (b) resigns due to some permanent infirmity disabling him from performing his duties in the Senate, may be granted an annuity equal to two thirds of his sessional indemnity for life. The widow of a person granted such an annuity may receive an annuity equal to one third of the annuity to the ex-member of the Senate.

Every former Prime Minister who held office for four years will receive from the Consolidated Revenue Fund an allowance of two thirds of the annual salary provided for Prime Ministers under the Salaries Act, the allowance to commence when the former Prime Minister ceases to hold office, or attains the age of 70 years, whichever is the later, and to continue during his lifetime. The widow of a Prime Minister will receive an annual payment of one third of the allowance that was being paid or that would have been paid to her husband, where he dies without receiving the allowance, such allowance to commence immediately after the death of her husband and to continue during her natural life or until her remarriage. None of these allowances is payable while the recipient is a Senator or a member of the House of Commons.

**The Federal Franchise.**—The present federal franchise laws are contained in the Canada Elections Act (SC 1960, c. 39). The franchise is conferred upon all Canadian citizens or British subjects, men and women, who have attained the age of 21 years, are ordinarily resident in the electoral district on the date of the issue of the writ ordering an

election and, in the case of British subjects other than Canadian citizens, have been ordinarily resident in Canada for twelve months prior to polling day at such election. Persons denied the right to vote are:—

- (1) the Chief Electoral Officer and the Assistant Chief Electoral Officer;
- (2) judges appointed by the Governor General in Council;
- (3) the returning officer for each electoral district;
- (4) persons undergoing punishment as inmates of any penal institution for the commission of any offence;
- (5) persons restrained of their liberty or deprived of the management of their property by reason of mental disease; and
- (6) persons disqualified under any law relating to the disqualification of electors for corrupt and illegal practices.

Prior to July 1, 1960, the list of persons denied the right to vote included "Indians ordinarily resident on an Indian reserve who were not members of His Majesty's Forces in World Wars I or II or who did not execute a waiver of exemption under the Indian Act from taxation on and in respect of personal property". Legislation proclaimed on the above-mentioned date confers upon all Indians who have attained the age of 21 years the right to vote at federal elections, without taking from them any of the rights and privileges to which they are entitled under the Indian Act. The Eskimos who are Canadian citizens possess the right to vote in federal elections, and the assumption of that right in the far-flung communities of the Canadian Far North has grown with Government establishment of electoral districts and polling facilities.

The Canadian Forces Voting Rules set out in Schedule II to the Canada Elections Act prescribe voting procedure for members of the Armed Forces of Canada and also for veterans in receipt of treatment or domiciliary care in certain institutions.

#### 12.—Voters on the Lists and Votes Polled at the Federal General Elections of 1962, 1963 and 1965

NOTE.—Corresponding statistics for the General Elections of 1911, 1917, 1921 and 1925 are given in the 1926 Year Book, p. 82; those for 1926 in the 1945 edition, p. 66; those for 1930 and 1935 in the 1948-49 edition, p. 94; those for 1940 in the 1956 edition, p. 81; those for 1945 in the 1957-58 edition, p. 57; those for 1949, 1953 and 1957 in the 1962 edition, p. 71; and those for 1958 in the 1966 edition, p. 90.

Province or Territory	Voters on the Lists			Votes Polled		
	1962	1963	1965	1962	1963	1965
	No.	No.	No.	No.	No.	No.
Newfoundland.....	215,565	221,321	226,082	155,263	152,175	148,392
Prince Edward Island.....	56,542	57,029	56,484	73,509 <sup>1</sup>	69,486 <sup>1</sup>	72,006 <sup>1</sup>
Nova Scotia.....	398,161	401,874	401,521	423,556 <sup>2</sup>	419,352 <sup>2</sup>	420,146 <sup>2</sup>
New Brunswick.....	302,313	304,732	304,734	252,053	245,557	244,184
Quebec.....	2,728,191	2,807,634	2,933,031	2,117,644	2,143,246	2,073,314
Ontario.....	3,397,647	3,455,363	3,609,895	2,719,020	2,799,870	2,770,222
Manitoba.....	508,920	516,525	517,928	393,023	401,870	382,362
Saskatchewan.....	502,495	505,551	508,733	426,426	419,973	404,631
Alberta.....	680,253	700,920	725,447	505,752	552,164	534,870
British Columbia.....	891,686	921,074	972,063	691,930	740,229	731,438
Yukon Territory <sup>3</sup> .....	6,762	6,878	6,660	5,978	6,051	5,760
Northwest Territories <sup>4</sup> .....	11,790	11,856	12,326	8,502	8,663	9,403
<b>Totals.....</b>	<b>9,700,325</b>	<b>9,910,757</b>	<b>10,274,904</b>	<b>7,772,656</b>	<b>7,958,636</b>	<b>7,796,728</b>

<sup>1</sup> Each voter in the double-member constituency of Queens County, P.E.I., had two votes; in 1965, 23,250 voters on the list cast 44,895 votes.

<sup>2</sup> Each voter in the double-member constituency of Halifax, N.S., had two votes; in 1965, 124,633 voters on the list cast 184,153 votes.

<sup>3</sup> Electoral District of Yukon.

<sup>4</sup> Electoral District of Mackenzie River in 1962 and Electoral District of Northwest Territories in 1963 and 1965.

### Subsection 3.—The Judiciary

#### The Federal Judiciary

The Parliament of Canada is empowered by Sect. 101 of the British North America Act from time to time to provide for the constitution, maintenance and organization of a general Court of Appeal for Canada and for the establishment of any additional courts for the better administration of the laws of Canada. Under this provision, Parliament has established the Supreme Court of Canada, the Exchequer Court of Canada and certain miscellaneous courts.

**Supreme Court of Canada.**—This Court, first established in 1875 and now governed by the Supreme Court Act (RSC 1952, c. 259), consists of a chief justice, who is called the Chief Justice of Canada, and eight puisne judges. The chief justice and the puisne judges are appointed by the Governor in Council and they hold office during good behaviour but are removable by the Governor General on address of the Senate and the House of Commons. They cease to hold office upon attaining the age of 75 years. The Court sits at Ottawa and exercises general appellate jurisdiction throughout Canada in civil and criminal cases. The Court is also required to consider and advise upon questions referred to it by the Governor in Council and it may also advise the Senate or the House of Commons on private Bills referred to the Court under any rules or orders of the Senate or of the House of Commons.

Appeals may be brought from any final judgment of the highest court of final resort in a province in any case where the amount or value of the matter in controversy exceeds the sum of \$10,000. An appeal may be brought from any other final judgment with leave of the highest court of final resort in the province; if such court refuses to grant leave, the Supreme Court of Canada may grant leave to appeal. The Supreme Court may grant leave to appeal from any judgment whether final or not. Appeals in respect of indictable offences are regulated by the Criminal Code. Appeals from federal courts are regulated by the statute establishing such courts. The judgment of the Supreme Court of Canada in all cases is final and conclusive.

#### 13.—Chief Justice and Judges of the Supreme Court of Canada, as at Oct. 1, 1966

(In order of seniority)

Name	Date of Appointment
Hon. Mr. ROBERT TASCHEREAU, P.C., Chief Justice of Canada.....	Apr. 22, 1963 <sup>1</sup>
Hon. Mr. Justice JOHN R. CARTWRIGHT.....	Dec. 23, 1949
Hon. Mr. Justice J. H. GERALD FAUTEUX.....	Dec. 23, 1949
Hon. Mr. Justice DOUGLAS CHARLES ABBOTT.....	July 1, 1954
Hon. Mr. Justice RONALD MARTLAND.....	Jan. 15, 1958
Hon. Mr. Justice WILFRED JUDSON.....	Feb. 5, 1958
Hon. Mr. Justice ROLAND A. RITCHIE.....	May 5, 1959
Hon. Mr. Justice EMMETT M. HALL.....	Nov. 23, 1962
Hon. Mr. Justice WISHART FLETT SPENCE.....	May 30, 1963

<sup>1</sup> First appointed a Judge of the Supreme Court, Feb. 9, 1940.

**Exchequer Court of Canada.**—The Exchequer Court was first established in 1875 as part of the Supreme Court of Canada but is now a separate court governed by the



Exchequer Court Act (RSC 1952, c. 98). The Court consists of a president and six puisne judges who are appointed by the Governor in Council. The president and the puisne judges hold office during good behaviour but may be removed by the Governor General on address of the Senate and the House of Commons. They cease to hold office upon attaining the age of 75 years. The Court sits at Ottawa and also at any other place in Canada where sittings may be fixed by the Court. The jurisdiction of the Court extends to cases where claims are made by or against the Crown in right of Canada. Proceedings against the Crown are taken by petition of right pursuant to the Petition of Right Act (RSC 1952, c. 210).

An appeal lies to the Supreme Court of Canada from any final judgment of the Exchequer Court in which the amount in controversy exceeds \$500; an appeal also lies with leave of the Supreme Court in certain cases where the amount in controversy does not exceed \$500 or where the judgment is not final.

The Exchequer Court also exercises admiralty jurisdiction in Canada. This was first conferred in 1891 by the Admiralty Act (SC 1891, c. 29) and is now governed by the Admiralty Act (RSC 1952, c. 1). Under this statute, the Exchequer Court is continued as a Court of Admiralty. The president and puisne judges of the Exchequer Court exercise admiralty jurisdiction throughout the whole of Canada. In addition, Canada is divided into various admiralty districts; a district judge in admiralty is appointed for each district. Appeals to the Supreme Court of Canada from judgments of the president or the puisne judges are governed by the general appeal provisions in the Exchequer Court Act. Appeals may be taken from a final judgment of a district judge in admiralty either to the Exchequer Court or direct to the Supreme Court of Canada.

**Miscellaneous Courts.**—*Railway Act.*—The Railway Act, 1903 (RSC 1952, c. 234) established the Board of Railway Commissioners for Canada as a court of record; by the Transport Act, 1938 (RSC 1952, c. 271) the name was changed to the Board of Transport Commissioners for Canada. This court exercises jurisdiction with respect to railway matters. The Governor in Council is given jurisdiction to vary any order of the Board and an appeal lies from the Board to the Supreme Court of Canada upon a question of jurisdiction or a question of law.

*Bankruptcy Act.*—By virtue of Sect. 91(21) of the British North America Act, 1867, Parliament has exclusive legislative jurisdiction in relation to bankruptcy and insolvency. By the Bankruptcy Act (RSC 1952, c. 14) the superior courts of the provinces are constituted bankruptcy courts; original jurisdiction is conferred upon the trial courts and appellate jurisdiction is conferred upon the appeal courts of the provinces.

*Income Tax Act and Estate Tax Act.*—By the Income Tax Act (RSC 1952, c. 148) the Tax Appeal Board is established consisting of a chairman and not fewer than two or more than four members with jurisdiction over appeals against income tax assessments. A further appeal may be taken to the Exchequer Court. Under the Estate Tax Act (SC 1958, c. 29) the Tax Appeal Board also has jurisdiction to hear appeals from assessments under that Act.

*National Defence Act.*—The Court Martial Appeal Court was established in 1959 by an amendment to the National Defence Act (SC 1959, c. 5). The judges of the Court are not fewer than four judges of the Exchequer Court of Canada designated by the Governor in Council and such additional judges of a superior court of criminal jurisdiction as are appointed by the Governor in Council. The Governor in Council designates one of the judges to be president of the Court. The Court hears appeals from courts martial respecting the legality of a finding of guilty on any charge and the legality of a sentence passed by a court martial. An appeal lies from the Court Martial Appeal Court to the Supreme Court of Canada on a question of law only.

### Provincial and Territorial Judiciaries\*

Certain provisions of the British North America Act govern to some extent the provincial judiciaries. Under Sect. 92(14) the legislature of each province exclusively may make laws in relation to the administration of justice in the province including the constitution, maintenance and organization of provincial courts both of civil and of criminal jurisdiction. Sect. 96 provides that the Governor General shall appoint the judges of the superior, district and county courts in each province, except those of the courts of probate in Nova Scotia and New Brunswick. Sect. 100 provides that the salaries, allowances and pensions of judges of the superior, district and county courts (except the courts of probate in Nova Scotia and New Brunswick) are to be fixed and provided by the Parliament of Canada and these are set out in the Judges Act (RSC 1952, c. 159 and amendments). Under Sect. 99, the judges of the superior courts hold office during good behaviour but are removable by the Governor General on address of the Senate and the House of Commons. They cease to hold office upon attaining the age of 75 years. The tenure of office of district and county court judges is fixed by the Judges Act as being during good behaviour and their residence within the area for which the court is established.

All provinces have minor courts with limited civil and criminal jurisdiction, the presiding officers of which are appointed by provincial authority as, for example, justices of the peace, magistrates and juvenile court judges. Except in Quebec, there are county or district courts of each province with limited jurisdiction varying from \$500 to \$2,500 in amount. Each province has a superior court with virtually unlimited jurisdiction variously known as Court of Queen's Bench, Supreme Court, Superior Court, etc. There is also a Court of Appeal in each province.

The Yukon Act and the Northwest Territories Act each provide for a superior court of record in and for the Territory, called the Territorial Court, and consisting of one or more judges appointed by the Governor in Council. The judges of the Territorial Court of the Yukon Territory are ex officio judges of the Territorial Court of the Northwest Territories and vice versa. There is a Court of Appeal in each of the Territories. Police magistrates and justices of the peace have jurisdiction in minor civil and criminal cases.

## Section 2.—Provincial and Territorial Governments†

In each of the provinces, The Queen is represented by a Lieutenant-Governor appointed by the Governor General in Council. The Lieutenant-Governor acts on the advice and with the assistance of his Ministry or Executive Council which is responsible to the Legislature and resigns office under circumstances similar to those described on p. 86 concerning the Federal Government.

The Legislature of each province is unicameral, consisting of the Lieutenant-Governor and a Legislative Assembly, except for the Province of Quebec where there is a Legislative Council as well as a Legislative Assembly. The Legislative Assembly is elected by the people for a statutory term of five years but may be dissolved within that period by the Lieutenant-Governor on the advice of the Premier of the province.

The source of legislative authority of the Provincial Legislatures is the British North America Act, 1867 (Br. Stat. 1867, c. 3 and amendments). Under Sect. 92 of the Act, the Legislature of each province exclusively may make laws in relation to the following matters: amendment of the constitution of the province except as regards the Lieutenant-

\* More detailed information concerning provincial judiciaries is given in the 1954 Year Book, pp. 48-55; a re-organization of the Supreme Court of Nova Scotia became effective Aug. 1, 1966.

† Except where indicated, the information given in this Section is brought up to June 30, 1966. Any important changes occurring between that date or the date given for an individual province and the time of going to press will be found in an Appendix to this volume.

Governor; direct taxation within the province; borrowing of money on the credit of the province; establishment and tenure of provincial offices and appointment and payment of provincial officers; the management and sale of public lands belonging to the province and of the timber and wood thereon; the establishment, maintenance and management of public and reformatory prisons in and for the province; the establishment, maintenance and management of hospitals, asylums, charities and eleemosynary institutions in and for the province, other than marine hospitals; municipal institutions in the province; shop, saloon, tavern, auctioneer and other licences issued for the raising of provincial or municipal revenue; local works and undertakings other than interprovincial or international lines of ships, railways, canals, telegraphs, etc., or works which, though wholly situated within one province, are declared by the Federal Parliament to be for the general advantage either of Canada or of two or more provinces; the incorporation of companies with provincial objects; the solemnization of marriage in the province; property and civil rights in the province; the administration of justice in the province including the constitution, maintenance and organization of provincial courts both of civil and of criminal jurisdiction including procedure in civil matters in these courts; the imposition of punishment by fine, penalty or imprisonment for enforcing any law of the province relating to any of the foregoing subjects; generally all matters of a merely local or private nature in the province.

Further, in and for each province the Legislature exclusively may, under Sect. 93, make laws in relation to education subject to certain restrictions relating to the establishment of schools by religious minorities. These powers with similar restrictions were conferred on the more recently admitted provinces on their inclusion in the federation.

The Provincial Legislatures may also make laws under Sect. 95 in relation to agriculture and immigration, subject to any laws of the Parliament of Canada in relation to these subjects.

**Provincial Franchise.**—Details regarding qualifications and disqualifications of the franchise are contained in the Elections Act of each province. In general, every person, male or female, at a specified age (18 to 21 years) who is a Canadian citizen or other British subject, who complies with certain residence requirements in the province and the electoral district of polling and who falls under no statutory disqualifications, is entitled to vote. Voting privileges are given to persons in Quebec and Saskatchewan at the age of 18, in Newfoundland, Alberta and British Columbia at 19 years, and in the remaining provinces at 21 years.

### Subsection 1.—Newfoundland

The Government of Newfoundland consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. The Legislative Assembly has 42 members elected for a term of five years. The Legislature elected Sept. 8, 1966 is the 34th in the history of Newfoundland and the 6th since Confederation.

Since the date of Confederation, Mar. 31, 1949, the province has had four Lieutenant-Governors: the Hon. Sir Albert Joseph Walsh commissioned Apr. 1, 1949; the Hon. Lt.-Col. Sir Leonard Outerbridge commissioned Sept. 5, 1949; the Hon. Campbell Macpherson commissioned Dec. 16, 1957; and the Hon. Fabian O'Dea commissioned Mar. 1, 1963. The first Ministry, formed on July 13, 1949 under the leadership of the Hon. Joseph R. Smallwood, was still in office on Oct. 1, 1966.

The Premier receives a salary of \$10,000 and the other Cabinet Ministers \$9,000 per annum, plus a sessional indemnity of \$4,333.33 and a travelling and expense allowance of \$2,166.66. Each member of the House of Assembly receives a sessional indemnity of \$4,333.33 plus a travelling and expense allowance of \$2,166.66. An additional allowance of \$3,000 is made to the Leader of the Opposition.



**14.—First Ministry of Newfoundland, as at Oct. 1, 1966**

(Party standing at latest General Election, Sept. 8, 1966: 39 Liberal and 3 Progressive Conservative.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and Minister of Economic Development.....	Hon. J. R. SMALLWOOD.....	Apr. 1, 1949	Apr. 1, 1949
President of the Council.....	Hon. L. R. CURTIS.....	Apr. 1, 1949	Sept. 8, 1966
Minister of Mines, Agriculture and Resources	Hon. W. J. KEOUGH.....	July 29, 1949	May 1, 1957
Minister of Public Works.....	Hon. J. R. CHALKER.....	Apr. 4, 1950	May 1, 1957
Minister without Portfolio.....	Hon. P. J. LEWIS.....	Dec. 15, 1951	Dec. 15, 1951
Minister of Finance.....	Hon. F. W. ROWE.....	May 21, 1952	Dec. 7, 1964
Minister without Portfolio.....	Hon. B. J. ABBOTT.....	May 1, 1957	Sept. 8, 1966
Minister of Health.....	Hon. J. M. McGRATH.....	July 5, 1956	Aug. 7, 1956
Minister of Provincial Affairs.....	Hon. G. A. FRECKER.....	Aug. 26, 1959	Dec. 7, 1964
Minister of Fisheries.....	Hon. C. M. LANE.....	June 12, 1961	Feb. 15, 1963
Minister of Highways.....	Hon. E. S. JONES.....	Dec. 7, 1964	Dec. 7, 1964
Minister of Education.....	Hon. H. R. V. EARLE.....	Dec. 7, 1964	Dec. 7, 1964
Minister of Municipal Affairs and Supply.....	Hon. J. C. CROSBIE.....	July 19, 1966	Sept. 8, 1966
Minister of Justice.....	Hon. T. A. HICKMAN.....	July 28, 1966	Sept. 8, 1966
Minister of Labrador Affairs.....	Hon. C. R. GRANGER.....	Aug. 1, 1966	Sept. 8, 1966
Minister of Public Welfare.....	Hon. AIDAN MALONEY.....	Aug. 8, 1966	Sept. 8, 1966
Minister of Labour.....	Hon. CLYDE WELLS.....	Aug. 15, 1966	Sept. 8, 1966

**Subsection 2.—Prince Edward Island**

The Government of Prince Edward Island consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. Lieutenant-Governors from Confederation (1873) to 1959 are cited in the 1960 Year Book, p. 105; since that date, the position has been held by the Hon. F. W. Hyndman, appointed effective Mar. 31, 1958, followed by the Hon. W. J. MacDonald, appointed effective Aug. 1, 1963.

The General Assembly elected May 30, 1966 is the 51st in the history of Prince Edward Island Legislatures and the 26th since Confederation. It has 32 members from 16 electoral districts who serve for a statutory term of five years. Each district elects one Councillor and one Assembly member. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 105.

The annual salary of the Premier is \$8,000 and that of a Cabinet Minister \$5,000. Each member of the Assembly is paid \$2,000 for each session attended by him and an additional \$1,000 tax free as indemnity for expenses and travelling. The Speaker is paid an additional \$666.60 and a further additional \$333.40 tax free as indemnity for expenses and travelling. The Leader of the Opposition is paid an additional \$1,000 and a further additional \$500 tax free for expenses and travelling.

**15.—Legislatures of Prince Edward Island, 1945-66, as at Oct. 1, 1966**

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 75; for 1924-35 in the 1938 edition, p. 110; and for 1936-43 in the 1963-64 edition, p. 82.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Sept. 15, 1943	20th.....	4	Feb. 15, 1944	Oct. 27, 1947
Dec. 11, 1947	21st.....	5	Feb. 24, 1948	Mar. 30, 1951
Apr. 26, 1951	22nd.....	6	Oct. 23, 1951	Apr. 27, 1955
May 25, 1955	23rd.....	4	Feb. 2, 1956	Aug. 3, 1959
Sept. 1, 1959	24th.....	4	Mar. 1, 1960	Nov. 8, 1962
Dec. 10, 1962	25th.....	4	Mar. 14, 1963	Apr. 14, 1966
May 30, 1966	26th.....	1	1	1

<sup>1</sup> Not yet in session by Oct. 1, 1966.

**16.—Twenty-sixth Ministry of Prince Edward Island, as at Oct. 1, 1966**

(Party standing at latest General Election, May 30 and July 11, 1966: 17 Liberals and 15 Progressive Conservatives.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and Attorney and Advocate General	Hon. ALEX B. CAMPBELL.....	July 28, 1966	July 28, 1966
Minister of Public Works and Minister of Highways.....	Hon. GEORGE J. FERGUSON.....	July 28, 1966	July 28, 1966
Minister of Education and President of the Executive Council.....	Hon. GORDON L. BENNETT.....	July 28, 1966	July 28, 1966
Provincial Secretary and Provincial Treasurer.....	Hon. T. EARLE HICKEY.....	July 28, 1966	July 28, 1966
Minister of Health and Minister of Municipal Affairs.....	Hon. KEIR CLARK.....	June 11, 1953	July 28, 1966
Minister of Industry and Natural Resources and Minister of Fisheries.....	Hon. CECIL A. MILLER.....	July 28, 1966	July 28, 1966
Minister of Welfare and Minister of Tourist Development.....	Hon. M. LORNE BONNELL.....	June 16, 1955	July 28, 1966
Minister of Labour.....	Hon. J. ELMER BLANCHARD.....	July 28, 1966	July 28, 1966
Minister of Agriculture.....	Hon. DANIEL J. MACDONALD.....	July 28, 1966	July 28, 1966

**Subsection 3.—Nova Scotia**

The Government of Nova Scotia consists of a Lieutenant-Governor, an Executive Council and a House of Assembly. Lieutenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 106; since that date the position has been held by Maj.-Gen. the Hon. E. C. Plow, commissioned to office Sept. 1, 1958, followed by the Hon. H. P. MacKeen, commissioned to office Mar. 1, 1963.

The Legislature has 43 members elected for a maximum term of five years. The Legislature elected Oct. 8, 1963 is the 48th in Nova Scotia's history and the 25th since Confederation. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 107; the present Premier assumed office in 1956.

The Premier of the province receives a salary of \$12,000 per annum and each Cabinet Minister a salary of \$10,000 per annum and \$800 per annum as expenses of representation. Each member of the House of Assembly receives a sessional indemnity of \$4,000 and an allowance of \$2,000 for expenses incidental to the discharge of his duties. The Leader of the Opposition receives an allowance of \$7,200 and an \$800 representation allowance in addition to his sessional indemnity.

**17.—Legislatures of Nova Scotia, 1945-66, as at June 30, 1966**

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 76; for 1924-33 in the 1938 edition, p. 111; and for 1939-44 in the 1963-64 edition, p. 83.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Oct. 23, 1945	20th.....	4	Mar. 14, 1946	Apr. 27, 1949
June 9, 1949	21st.....	4	Mar. 21, 1950	Apr. 14, 1953
May 26, 1953	22nd.....	4	Feb. 24, 1954	Sept. 20, 1956
Oct. 30, 1956	23rd.....	3	Feb. 27, 1957	Apr. 26, 1960
June 7, 1960	24th.....	3	Feb. 8, 1961	Aug. 29, 1963
Oct. 8, 1963	25th.....	1	Feb. 6, 1964	i

<sup>1</sup> Life of Legislature not expired at June 30, 1966.

**18.—Seventeenth Ministry of Nova Scotia, as at June 30, 1966**

(Party standing at latest General Election, Oct. 8, 1963: 39 Progressive Conservative and 4 Liberal.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and Minister of Education.....	Hon. R. L. STANFIELD.....	Nov. 20, 1956	Nov. 20, 1956
Minister of Finance and Economics and Chairman of the Nova Scotia Power Commission.....	Hon. G. I. SMITH.....	Nov. 20, 1956	{May 2, 1962 Nov. 20, 1956
Attorney General and Minister of Public Health.....	Hon. R. A. DONAHOE.....	Nov. 20, 1956	Nov. 20, 1956
Minister of Public Works and Minister of Highways.....	Hon. S. T. PYKE.....	Nov. 20, 1956	{Nov. 20, 1956 May 2, 1962
Minister of Lands and Forests and Minister of Fisheries.....	Hon. E. D. HALIBURTON.....	Nov. 20, 1956	{July 27, 1959 July 6, 1964
Minister of Labour.....	Hon. N. L. FERGUSON.....	Nov. 20, 1956	May 2, 1962
Minister of Trade and Industry.....	Hon. W. S. KENNEDY JONES.....	Apr. 21, 1960	{July 6, 1964 May 2, 1962
Minister without Portfolio.....	Hon. G. A. BURRIDGE.....	Oct. 13, 1960	Oct. 13, 1960
Minister of Mines and Minister in Charge of the Liquor Control Act.....	Hon. D. M. SMITH.....	Oct. 13, 1960	{Dec. 12, 1961 Oct. 13, 1960
Minister without Portfolio.....	Hon. D. R. MACLEOD.....	July 6, 1964	July 6, 1964
Minister of Public Welfare.....	Hon. J. M. HARDING.....	July 6, 1964	July 6, 1964
Minister of Municipal Affairs.....	Hon. T. J. McKEOUGH.....	July 6, 1964	July 6, 1964
Minister of Agriculture and Marketing and Minister under the Water Act.....	Hon. I. W. AKERLEY.....	July 6, 1964	July 6, 1964
Provincial Secretary and Minister in Charge of Civil Defence.....	Hon. G. J. DOUCET.....	July 6, 1964	July 6, 1964

**Subsection 4.—New Brunswick**

The Government of New Brunswick has a Lieutenant-Governor, an Executive Council and a House of Assembly. Lieutenant-Governors since Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 108; since that date, the position has been held by the Hon. J. Leonard O'Brien, appointed June 6, 1958, followed by the Hon. John B. McNair, appointed June 9, 1965.

The Legislature elected Apr. 22, 1963 is the 45th in New Brunswick's history and the 18th since Confederation. It has 52 members who are elected for a statutory term of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 108; the present Premier assumed office in 1960.

The Premier receives \$7,500 per annum in addition to the salary for any other portfolio he may hold. The salary of each Cabinet Minister is \$10,000 and the amount paid as indemnity to each member of the House of Assembly is \$3,400 plus an additional \$1,700 allowance for expenses. The Leader of the Opposition receives an additional \$6,000 and the Speaker receives an allowance of \$4,000 in addition to the regular indemnity.

**19.—Legislatures of New Brunswick, 1945-66, as at June 30, 1966**

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 77; for 1924-35 in the 1938 edition, p. 112; and for 1936-44 in the 1963-64 edition, p. 84.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Aug. 28, 1944	13th.....	4	Feb. 20, 1945	May 18, 1948
June 28, 1948	14th.....	4	Mar. 8, 1949	July 16, 1952
Sept. 22, 1952	15th.....	4	Feb. 12, 1953	Apr. 17, 1956
June 18, 1956	16th.....	4	Feb. 21, 1957	May 19, 1960
June 27, 1960	17th.....	3	Nov. 17, 1960	Mar. 12, 1963
Apr. 22, 1963	18th.....	1	May 28, 1963	<sup>1</sup>

<sup>1</sup> Life of Legislature not expired at June 30, 1966.



**20.—Twenty-third Ministry of New Brunswick, as at June 30, 1966**

(Party standing at latest General Election, Apr. 22, 1963: 31 Liberal and 21 Progressive Conservative.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier.....	Hon. LOUIS J. ROBICHAUD.....	July 12, 1960	July 12, 1960
Attorney General.....	Hon. BERNARD A. JEAN.....	Apr. 6, 1966	Apr. 6, 1966
Minister of Finance and Industry.....	Hon. L. G. DESBRISAY.....	July 12, 1960	July 12, 1960
Provincial Secretary.....	Hon. JOSEPH E. LeBLANC.....	July 12, 1960	May 18, 1965
Minister of Public Works.....	Hon. ANDRÉ F. RICHARD.....	July 12, 1960	July 12, 1960
Minister of Lands and Mines.....	Hon. WILLIAM R. DUFFIE.....	July 12, 1960	Mar. 22, 1966
Minister of Agriculture.....	Hon. J. ADRIEN LEVESQUE.....	July 12, 1960	July 12, 1960
Minister of Health.....	Hon. Dr. GEORGES L. DUMONT..	July 12, 1960	July 12, 1960
Minister of Labour.....	Hon. KENNETH J. WEBBER.....	July 12, 1960	July 12, 1960
Minister of Education.....	Hon. W. W. MELDRUM.....	May 18, 1965	Apr. 6, 1966
Minister of Municipal Affairs.....	Hon. L. NORBERT THERIAULT...	May 18, 1965	May 18, 1965
Minister of Fisheries.....	Hon. R. ERNEST RICHARD.....	May 28, 1963	July 8, 1963
Minister of Youth and Welfare.....	Hon. JOHN D. MACCALLUM.....	Mar. 22, 1966	Mar. 22, 1966
Chairman, New Brunswick Electric Power Commission.....	Hon. H. GRAHAM CROCKER.....	July 12, 1960	May 18, 1965

**Subsection 5.—Quebec**

The Government of Quebec consists of a Lieutenant-Governor, an Executive Council and a bicameral legislature—the Legislative Council and the Legislative Assembly. Lieutenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 109; since that date the position has been held by the Hon. Onésime Gagnon, commissioned to office Feb. 14, 1958, followed by the Hon. Paul Comtois, commissioned to office Oct. 6, 1961, and the Hon. Hugues Lapointe, commissioned to office Feb. 22, 1966.

The Legislative Council has 24 members nominated for life by the Lieutenant-Governor in Council. The Legislative Assembly has 108 elected members and, like the Legislative Council, has the power to bring forward Bills relating to civil and administrative matters and to the amendment or repeal of existing laws. A Bill to be approved by the Lieutenant-Governor must have received the assent of both Houses. Only the Legislative Assembly can bring forward a Bill requiring the expenditure of public money. The maximum life of a legislature is five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 110; the Hon. Jean Lesage became Premier in 1961 and the Hon. Daniel Johnson in 1966.

Each member of the Legislative Council and the Legislative Assembly receives a sessional indemnity of \$10,000, plus an expense allowance of \$2,000 to each Legislative Councillor and \$6,000 to each member of the Legislative Assembly. In addition to this sessional indemnity and allowance, the Premier receives an annual indemnity of \$16,000, an expense allowance of \$4,000 and a lodging allowance of \$2,000; Ministers with Portfolio each receive an annual indemnity of \$12,000 plus a \$3,000 expense allowance; Ministers without Portfolio each receive an indemnity of \$8,000 plus a \$3,000 expense allowance; the Speaker of the Legislative Assembly receives an indemnity of \$10,000, an expense allowance of \$2,000 and a lodging allowance of \$1,000 and the Deputy Speaker receives an indemnity of \$5,000 and an expense allowance of \$1,000; the Leader of the Opposition in the Assembly receives an indemnity of \$10,000, an expense allowance of \$3,000 and a lodging allowance of \$2,000; the Leader of the Government and the Leader of the Opposition in the Legislative Council each receive an additional sessional indemnity of \$2,000 plus a \$3,000 expense allowance.

**21.—Legislatures of Quebec, 1945-66, as at June 30, 1966**

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 78; for 1924-35 in the 1938 edition, p. 113; and for 1936-44 in the 1963-64 edition, p. 85.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Aug. 8, 1944	22nd.....	4	Feb. 7, 1945	June 9, 1948
July 28, 1948	23rd.....	4	Jan. 19, 1949	May 28, 1952
July 16, 1952	24th.....	4	Nov. 12, 1952	Apr. 25, 1956
June 20, 1956	25th.....	4	Nov. 14, 1956	Apr. 27, 1960
June 22, 1960	26th.....	3	Sept. 20, 1960	Sept. 19, 1962
Nov. 15, 1962	27th.....	6	Jan. 15, 1963	Apr. 18, 1966

**22.—Twenty-fourth Ministry of Quebec, as at June 30, 1966**

(Party standing at latest General Election, June 5, 1966: 56 Union Nationale, 50 Liberal and 2 Independent.)

Office	Name	Date of Appointment
Prime Minister, President of the Executive Council, Minister of Federal-Provincial Affairs and Minister of Natural Resources.....	HON. DANIEL JOHNSON.....	June 16, 1966
Minister of Education and Minister of Justice.....	HON. JEAN-JACQUES BERTRAND.....	June 16, 1966
Minister of Finance and Minister of Municipal Affairs.....	HON. PAUL DOZOIS.....	June 16, 1966
Minister of Labour and Minister of Industry and Commerce.....	HON. MAURICE BELLEMARE.....	June 16, 1966
Minister of Revenue.....	HON. RAYMOND JOHNSTON.....	June 16, 1966
Minister of Transport and Communications.....	HON. FERNAND LIZOTTE.....	June 16, 1966
Minister of Lands and Forests.....	HON. CLAUDE GOSSELIN.....	June 16, 1966
Minister of Highways and Minister of Public Works.....	HON. FERNAND LAFONTAINE.....	June 16, 1966
Provincial Secretary.....	HON. YVES GABIAS.....	June 16, 1966
Minister of Health and Minister of Family and Social Welfare.....	HON. JEAN-PAUL CLOUTIER.....	June 16, 1966
Minister of Tourism, Fish and Game.....	HON. GABRIEL LOUBIER.....	June 16, 1966
Minister of Cultural Affairs.....	HON. JEAN-NOËL TREMBLAY.....	June 16, 1966
Minister of Agriculture and Colonization.....	HON. CLÉMENT VINCENT.....	June 16, 1966
Minister without Portfolio (Municipal Affairs)....	HON. FRANCIS BOUDREAU.....	June 16, 1966
Minister without Portfolio (Industry and Commerce).....	HON. EDGAR CHARBONNEAU.....	June 16, 1966
Minister without Portfolio (Public Works).....	HON. ARMAND RUSSELL.....	June 16, 1966
Minister without Portfolio (Justice).....	HON. ARMAND MALTAIS.....	June 16, 1966
Minister without Portfolio (Health).....	HON. DR. ROCH BOIVIN.....	June 16, 1966
Minister without Portfolio (Education).....	HON. MARCEL MASSE.....	June 16, 1966
Minister without Portfolio (Family and Social Welfare).....	HON. FRANÇOIS-EUGÈNE MATHIEU.....	June 16, 1966
Minister without Portfolio (Highways).....	HON. PAUL ALLARD.....	June 16, 1966

**23.—Members of the Legislative Council of Quebec, as at June 30, 1966**

(According to seniority)

Name	Division	Date of Appointment
R. O. GROTHÉ.....	De Salaberry.....	Dec. 20, 1927
HECTOR LAFERTÉ (Speaker).....	Stadacona.....	July 25, 1934
J. L. BARIÉAU.....	Shawinigan.....	Jan. 14, 1938
PHILIPPE BRAIS.....	Grandville.....	Feb. 16, 1940
JULES BRILLANT.....	Golfe.....	Jan. 14, 1942
FÉLIX MESSIER.....	De Lanaudière.....	Feb. 12, 1942
ÉDOUARD ASSELIN.....	Wellington.....	Jan. 23, 1946
GEO. B. FOSTER.....	Victoria.....	Aug. 22, 1946
GÉRALD MARTINEAU.....	Lauson.....	Aug. 22, 1946
J. OMER RENAUD.....	Alma.....	Aug. 22, 1946

## 23.—Members of the Legislative Council of Quebec, as at June 30, 1966—concluded

Name	Division	Date of Appointment
PATRICE TARDIF.....	De la Vallière.....	July 20, 1952
ÉDOUARD MASSON.....	Repentigny.....	Mar. 12, 1953
ALBERT BOUCHARD.....	La Salle.....	Nov. 24, 1954
JEAN BARRETTE.....	Sorel.....	Oct. 19, 1955
ALBINY PAQUETTE.....	Rougemont.....	Oct. 29, 1958
JOHN P. ROWAT.....	De Lorimier.....	Oct. 29, 1958
ERNEST BENOIT.....	Kennebec.....	Apr. 8, 1959
ANTONIO AUGER.....	Les Laurentides.....	Sept. 30, 1959
OSCAR GILBERT.....	Bedford.....	Mar. 30, 1960
JEAN RAYMOND.....	Rigaud.....	Apr. 27, 1960
GEORGE C. MARLER (Leader).....	Inkerman.....	Oct. 8, 1960
ARTHUR DUPRÉ.....	Montarville.....	Aug. 21, 1963
GEORGE O'REILLY.....	La Durantaye.....	Aug. 12, 1964
LIONEL BERTRAND.....	Mille Isles.....	Nov. 25, 1964

## Subsection 6.—Ontario

The Government of Ontario consists of a Lieutenant-Governor, an Executive Council and a House of Assembly. Lieutenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 112; since that date the position has been held by the Hon. Justice John Keiller Mackay, appointed effective Dec. 30, 1957, followed by the Hon. William Earl Rowe, appointed effective Mar. 1, 1963.

The House of Assembly, the single-chamber Legislature of the province, is composed of 108 members elected for a statutory term of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 112; the Hon. John Parmenter Robarts became Premier on Nov. 8, 1961 upon the resignation of the Hon. Leslie M. Frost, Premier from May 4, 1949.

Besides the regular departments of government, the Niagara Parks Commission, the Ontario Municipal Board, The Hydro-Electric Power Commission of Ontario, the Ontario-St. Lawrence Development Commission, the Ontario Northland Transportation Commission, the Liquor Control Board, the Liquor Licence Board, the Hospital Services Commission and The Water Resources Commission have been created.

Under the provisions of the Legislative Assembly Act (RSO 1960, c. 208 as amended) each member of the Assembly is paid an annual indemnity of \$8,000 and an allowance for expenses at the rate of \$3,000 for every member of the Assembly representing an electoral district within the Municipality of Metropolitan Toronto and \$4,000 for every member representing any other electoral district. In addition, the Speaker receives a special indemnity at the annual rate of \$3,000 and an expense allowance of \$2,000; the Chairman of the Committee of the Whole a special indemnity at the annual rate of \$2,000; and the Leader of the Opposition a salary of \$12,000 per annum in addition to his indemnity as a member. Each member of the Cabinet having charge of a department receives the ordinary indemnity as a member of the Legislature in addition to his salary as a Minister of the Crown. The salary provided in the Executive Council Act for the Premier is \$16,000 and for a Cabinet Minister having charge of a department \$12,000. By the 1956 amendment, every Minister of the Crown in charge of a department, the Minister of the Crown who is a member of The Hydro-Electric Power Commission of Ontario, and the Leader of the Opposition receives a representation allowance of \$2,000 per annum. Each Minister without Portfolio, other than the Minister who is a member of The Hydro-Electric Power Commission, receives \$2,500 salary and \$1,000 representation allowance per annum.



**24.—Legislatures of Ontario, 1945-66, as at June 30, 1966**

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 79; for 1924-34 in the 1938 edition, p. 114; and for 1935-45 in the 1963-64 edition, p. 87.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 4, 1945	22nd.....	4	July 16, 1945	Apr. 27, 1948
June 7, 1948	23rd.....	4	Feb. 10, 1949	Oct. 6, 1951
Nov. 22, 1951	24th.....	4	Feb. 21, 1952	May 2, 1955
June 9, 1955	25th.....	5	Sept. 8, 1955	May 4, 1959
June 11, 1959	26th.....	4	Jan. 26, 1960	Aug. 16, 1963
Sept. 25, 1963	27th.....	1	Oct. 29, 1963	1

<sup>1</sup> Life of Legislature not expired at June 30, 1966.

**25.—Seventeenth Ministry of Ontario, as at June 30, 1966**

(Party standing at latest General Election, Sept. 25, 1963: 77 Progressive Conservative, 24 Liberal and 7 New Democratic Party.)

NOTE.—Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and President of the Council.....	Hon. JOHN PARMENTER ROBERTS.	Dec. 22, 1958	Nov. 8, 1961
Minister of Lands and Forests.....	Hon. ARCHIBALD KELSO ROBERTS.	Aug. 17, 1955	Oct. 25, 1962
Minister of Public Welfare.....	Hon. LOUIS PIERRE CECILE.....	Sept. 17, 1948	Aug. 17, 1955
Provincial Treasurer.....	Hon. JAMES NOBLE ALLAN.....	Jan. 5, 1955	Apr. 28, 1958
Minister of Public Works.....	Hon. THOMAS RAY CONNELL.....	Nov. 1, 1956	Dec. 22, 1958
Minister of Health.....	Hon. MATTHEW BULLOCH DYMOND.....	July 18, 1957	Dec. 22, 1958
Minister of Municipal Affairs.....	Hon. JOSEPH WILFRID SPOONER...	July 18, 1957	Oct. 25, 1962
Provincial Secretary and Minister of Citizenship.....	Hon. JOHN YAREMKO.....	Apr. 28, 1958	Nov. 8, 1961
Minister of Mines.....	Hon. GEORGE CALVIN WARDROPE.	Dec. 22, 1958	Nov. 8, 1961
Minister of Labour.....	Hon. HENRY LESLIE ROWNTREE..	Nov. 21, 1960	Oct. 25, 1962
Minister of Reform Institutions.....	Hon. ALLAN GROSSMAN.....	Nov. 21, 1960	Aug. 14, 1963
Minister of Agriculture and Food.....	Hon. WILLIAM ATCHESON STEWART	Nov. 21, 1960	Nov. 8, 1961
Minister of Highways.....	Hon. CHARLES STEEL MACNAUGHTON.....	Nov. 8, 1961	Oct. 25, 1962
Minister of Transport.....	Hon. IRWIN HASKETT.....	Nov. 8, 1961	Aug. 14, 1963
Minister of Tourism and Information.....	Hon. JAMES ALEXANDER CHARLES AULD.....	Oct. 25, 1962	Aug. 14, 1963
Minister of Education.....	Hon. WILLIAM GRENVILLE DAVIS.	Oct. 25, 1962	Oct. 25, 1962
Minister of Energy and Resources Management.....	Hon. JOHN RICHARD SIMONETT...	Oct. 25, 1962	Oct. 16, 1963
Minister of Economics and Development....	Hon. STANLEY JOHN RANDALL...	Nov. 8, 1963	Nov. 8, 1963
Attorney General.....	Hon. ARTHUR ALLISON WISHART..	Mar. 26, 1964	Mar. 26, 1964
Minister without Portfolio.....	Hon. GEORGE ELLIS GOMME.....	Jan. 12, 1965	Jan. 12, 1965

**Subsection 7.—Manitoba**

In addition to a Lieutenant-Governor, Manitoba has an Executive Council at present composed of 14 members and a Legislative Assembly of 57 members elected for a statutory term of five years. Lieutenant-Governors from Confederation (1870) to 1959 are cited in the 1960 Year Book, p. 113; since that date, the position has been held by the Hon. Errick F. Willis, sworn in on Jan. 15, 1960, followed by the Hon. Richard S. Bowles, appointed July 2, 1965. Premiers since Confederation are listed in the 1960 Year Book, p. 114.

The Premier of the province is paid a salary of \$18,000 per annum and each of the other members of the Cabinet \$15,000. Members of the Legislature are each paid a sessional indemnity of \$3,200 and a tax-free expense allowance of \$1,600 plus an allowance of \$10 a day for a period of 60 days continuous sitting including Saturdays and Sundays for members outside Metro Winnipeg who have to take board and lodging in Winnipeg during legislative sessions, and Cabinet Ministers in charge of a department each receive

an additional "representation allowance" of \$3,000. The Leader of the Opposition is paid an additional amount of \$6,000 and the Speaker of the Legislature receives \$9,600 which is an amount equal to double the indemnity and expense allowance of an individual member.

### 26.—Legislatures of Manitoba, 1945-66, as at Oct. 1, 1966

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 80; for 1924-36 in the 1938 edition, p. 115; and for 1937-45 in the 1963-64 edition, p. 88.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Oct. 15, 1945	22nd.....	4	Feb. 19, 1946	Sept. 29, 1949
Nov. 10, 1949	23rd.....	7	Feb. 14, 1950	Apr. 23, 1953
June 8, 1953	24th.....	5	Feb. 2, 1954	Apr. 30, 1958
June 16, 1958	25th.....	2	Oct. 23, 1958	Mar. 31, 1959
May 14, 1959	26th.....	5	June 9, 1959	Nov. 9, 1962
Dec. 14, 1962	27th.....	5	Feb. 28, 1963	May 18, 1966
June 23, 1966	28th.....	1	1	1

<sup>1</sup> Not yet in session by Oct. 1, 1966.

### 27.—Fifteenth Ministry of Manitoba, as at Oct. 1, 1966

(Party standing at latest General Election, June 23, 1966: 31 Progressive Conservative, 14 Liberal, 11 New Democratic Party and 1 Social Credit.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier, President of the Council, Minister of Dominion-Provincial Relations and Minister charged with the administration of the Manitoba Development Authority Act....	HON. DUFFERIN ROBLIN.....	June 30, 1958	June 30, 1958
Provincial Treasurer, Minister charged with the administration of the Insurance Act and Minister of Mines and Natural Resources..	HON. EDWARD GURNEY VAUX EVANS.....	June 30, 1958	July 22, 1966
Provincial Secretary, Minister of Public Works, Minister of Public Utilities and Minister in all other offices to which, and under all statutes under which, he has been appointed or designated as Minister.....	HON. STEWART E. McLEAN.....	June 30, 1958	July 22, 1966
Attorney-General and Minister of Tourism and Recreation.....	HON. STERLING RUFUS LYON.....	June 30, 1958	July 22, 1966
Minister of Education.....	HON. GEORGE JOHNSON.....	June 30, 1958	Dec. 9, 1963
Minister of Welfare.....	HON. JOHN B. CARROLL.....	June 30, 1958	Feb. 27, 1963
Minister of Health.....	HON. CHARLES H. WITNEY.....	Aug. 7, 1959	Dec. 9, 1963
Minister of Highways.....	HON. WALTER WEIR.....	Oct. 31, 1961	July 22, 1966
Minister of Labour.....	HON. OBIE BAIZLEY.....	Feb. 27, 1963	Feb. 27, 1963
Minister without Portfolio.....	HON. ROBERT G. SMELLIE.....	Feb. 27, 1963	July 22, 1966
Minister without Portfolio.....	HON. MAITLAND BERNARD STEINKOPF.....	June 12, 1963	July 22, 1966
Minister of Urban Development and Municipal Affairs.....	HON. THELMA FORBES.....	July 22, 1966	July 22, 1966
Minister of Industry and Commerce.....	HON. SIDNEY SPIVAK.....	July 22, 1966	July 22, 1966
Minister of Agriculture and Conservation....	HON. HARRY ENNS.....	July 22, 1966	July 22, 1966

### Subsection 8.—Saskatchewan

The Government of Saskatchewan consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. Lieutenant-Governors from Confederation (1905) to 1959 are cited in the 1960 Year Book, p. 115; since that date the office has been held by the Hon. F. L. Bastedo, commissioned to office Jan. 27, 1958, followed by the Hon. Robert L. Hanbidge, commissioned to office Mar. 1, 1963.

The statutory number of members of the Legislative Assembly is 59, elected for a maximum term of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 115; the Hon. W. S. Lloyd became Premier in 1961 and the Hon. W. R. Thatcher in 1964.

The Premier receives \$13,000 and each Cabinet Minister \$10,000 annually in addition to a sessional indemnity. The Leader of the Opposition receives \$10,000 plus an office allowance of \$12,000 per annum, the Speaker \$3,000 and the Deputy Speaker \$2,000. The sessional indemnity of a member of the Legislature is \$1,000 together with an expense allowance of \$2,000. Each of the members for the three northernmost constituencies of Cumberland, Athabasca and Meadow Lake receives a \$4,335 sessional indemnity and a \$2,165 expense allowance.

## 28.—Legislatures of Saskatchewan, 1945-66, as at June 30, 1966

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 81; for 1924-34 in the 1938 edition, p. 116; and for 1935-44 in the 1963-64 edition, p. 89.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 15, 1944	10th.....	5	Oct. 19, 1944	May 19, 1948
June 24, 1948	11th.....	5	Feb. 10, 1949	May 7, 1952
June 11, 1952	12th.....	4	Feb. 12, 1953	Apr. 25, 1956
June 20, 1956	13th.....	4	Feb. 14, 1957	May 4, 1960
June 8, 1960	14th.....	6	Oct. 11, 1960	Mar. 18, 1964
Apr. 22, 1964	15th.....	1	Feb. 4, 1965	1

<sup>1</sup> Life of Legislature not expired at June 30, 1966.

## 29.—Tenth Ministry of Saskatchewan, as at June 30, 1966

(Party standing at latest General Election, Apr. 22, 1964: 33 Liberal, 25 Co-operative Commonwealth Federation and 1 Progressive Conservative.)

Office	Name	Date of Appointment
Premier, President of the Executive Council and Provincial Treasurer.....	Hon. W. R. THATCHER.....	May 22, 1964
Minister of Agriculture.....	Hon. D. T. McFARLANE.....	July 5, 1965
Minister of Public Health.....	Hon. D. G. STEUART.....	May 22, 1964
Attorney General and Provincial Secretary.....	Hon. D. V. HEALD.....	May 22, 1964
Minister of Mineral Resources.....	Hon. A. C. CAMERON.....	May 22, 1964
Acting Minister of Industry and Commerce.....	Hon. G. B. GRANT.....	...
Minister of Education.....	Hon. G. J. TRAPP.....	May 22, 1964
Minister of Highways and Transportation and Minister of Telephones.....	Hon. G. B. GRANT.....	May 22, 1964
Minister of Welfare.....	Hon. D. BOLDT.....	May 29, 1964
Minister of Municipal Affairs.....	Hon. J. C. McISAAC.....	May 22, 1964
Minister of Labour and Minister of Co-operation and Co-operative Development.....	Hon. L. P. CODERRE.....	July 5, 1965
Minister of Public Works.....	Hon. J. W. GARDINER.....	May 22, 1964
Minister of Natural Resources.....	Hon. J. M. CUELENAERE.....	May 22, 1964

## Subsection 9.—Alberta

The Government of Alberta is composed of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. Lieutenant-Governors from Confederation (1905) to 1959 are listed in the 1960 Year Book, p. 116; since that date the office has been held by the Hon. J. Percy Page, commissioned to office Dec. 19, 1959, followed by the Hon. J. W. Grant MacEwan, commissioned in January 1966.

There are 63 members in the Legislative Assembly, elected for a maximum period of five years. Premiers since Confederation are listed in the 1960 Year Book, p. 117; the present Premier assumed office in 1943.

Each member of the Legislative Assembly (except the Speaker, the Deputy Speaker and the Leader of the Opposition) receives a sessional indemnity of \$3,600 plus \$1,800



expense allowance plus \$15 for each day during the session when the member is necessarily absent from his ordinary place of residence, both tax free. The Speaker's sessional indemnity is \$6,000 plus \$3,000 expense allowance, the Deputy Speaker's sessional indemnity is \$4,800 plus \$2,400 expense allowance, and the Leader of the Opposition's sessional indemnity is \$7,600 plus \$3,800 expense allowance. Each also receives \$15 for each day during the session when he is necessarily absent from his ordinary place of residence. The Premier, in addition to the sessional indemnity, receives \$16,000 and each of the other Ministers receives \$12,500.

### 30.—Legislatures of Alberta, 1945-66, as at June 30, 1966

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 82; for 1924-34 in the 1938 edition, p. 117; and for 1935-44 in the 1963-64 edition, p. 90.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Aug. 8, 1944	10th.....	5	Feb. 22, 1945	July 16, 1948
Aug. 17, 1948	11th.....	5	Feb. 17, 1949	June 28, 1952
Aug. 5, 1952	12th.....	3	Feb. 19, 1953	May 12, 1955
June 29, 1955	13th.....	5	Aug. 17, 1955	May 9, 1959
June 18, 1959	14th.....	5	Feb. 11, 1960	May 9, 1963
June 17, 1963	15th.....	1	Feb. 13, 1964	1

<sup>1</sup> Life of Legislature not expired at June 30, 1966.

### 31.—Eighth Ministry of Alberta, as at June 30, 1966

(Party standing at latest General Election, June 17, 1963: 60 Social Credit, 2 Liberal and 1 Coalition.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier, President of Council and Attorney General.....	HON. ERNEST C. MANNING.....	Sept. 3, 1935	{ May 31, 1943 Aug. 2, 1955
Minister of Municipal Affairs.....	HON. ALFRED J. HOOKE.....	Apr. 20, 1945	Aug. 2, 1955
Minister of Highways.....	HON. GORDON E. TAYLOR.....	Dec. 27, 1950	May 1, 1951
Minister of Education.....	HON. RANDOLPH H. MCKINNON.....	July 31, 1964	July 31, 1964
Minister of Public Welfare.....	HON. LEONARD C. HALMRAST.....	Jan. 3, 1953	Oct. 15, 1962
Minister of Lands and Forests.....	HON. HENRY A. RUSTE.....	Feb. 16, 1965	Feb. 16, 1965
Provincial Treasurer.....	HON. ANDERS O. AALBORG.....	Sept. 9, 1952	July 29, 1964
Minister of Public Works.....	HON. FRED C. COLBORNE.....	Aug. 2, 1955	Nov. 30, 1962
Minister of Industry and Development and Minister of Mines and Minerals.....	HON. A. RUSSELL PATRICK.....	Aug. 2, 1955	{ Sept. 1, 1959 Oct. 15, 1962
Minister of Labour and Minister of Telephones.....	HON. RAYMOND REIERSON.....	Aug. 2, 1955	Sept. 22, 1959
Minister of Health.....	HON. J. DONOVAN ROSS.....	Sept. 18, 1957	Sept. 18, 1957
Minister of Agriculture.....	HON. HARRY E. STROM.....	Oct. 15, 1962	Oct. 15, 1962
Provincial Secretary.....	HON. AMBROSE HOLOWACH.....	Oct. 15, 1962	Oct. 15, 1962
Minister without Portfolio.....	HON. IRA McLAUGHLIN.....	Nov. 30, 1962	Nov. 30, 1962
Minister without Portfolio.....	HON. ETHEL S. WILSON.....	Nov. 30, 1962	Nov. 30, 1962

### Subsection 10.—British Columbia

The Government of British Columbia has a Lieutenant-Governor, an Executive Council and a Legislative Assembly. Maj.-Gen. the Hon. George Randolph Pearkes, Lieutenant-Governor at Apr. 30, 1965, was commissioned to office Oct. 12, 1960. Lieutenant-Governors from Confederation (1871) to 1959 are cited in the 1960 Year Book, p. 118.

The Legislative Assembly, elected for a statutory term of five years, has 55 members. Premiers from Confederation to 1959 are cited in the 1960 Year Book, p. 118; the present Premier assumed office in 1952.

Each member of the Executive Council and the Legislative Assembly receives a sessional allowance of \$5,000 and \$1,500 for expenses. There is also paid to each member a living

allowance of \$1,000 and each member receives an allowance of 25 cents per mile of the distance between his place of residence and the city of Victoria, reckoning such distance, going and coming, according to the nearest mail route. Each member also receives an allowance of \$500 for telegraph and telephone expenses. In addition, the Premier receives a salary of \$20,000 and each member of the Executive Council a salary of \$17,500. The Leader of the Opposition receives a special allowance of \$7,500 for expenses, the Speaker receives a special allowance of \$7,500, and the Deputy Speaker a special allowance of \$2,500.

### 32.—Legislatures of British Columbia, 1945-66, as at Oct. 21, 1966

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 83; for 1924-37 in the 1938 edition, p. 118; and for 1938-45 in the 1963-64 edition, p. 91.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Oct. 25, 1945	21st.....	5	Feb. 21, 1946	Apr. 16, 1949
June 15, 1949	22nd.....	4	Feb. 14, 1950	Apr. 10, 1952
June 12, 1952	23rd.....	1	Feb. 3, 1953	Mar. 27, 1953
June 9, 1953	24th.....	4	Sept. 15, 1953	Aug. 13, 1956
Sept. 19, 1956	25th.....	4	Feb. 7, 1957	Aug. 3, 1960
Sept. 12, 1960	26th.....	4	Jan. 26, 1961	Aug. 21, 1963
Sept. 30, 1963	27th.....	3	Jan. 23, 1964	Aug. 5, 1966
Sept. 12, 1966	28th.....	1	1	1

<sup>1</sup> Not yet in session by Oct. 21, 1966.

### 33.—Twenty-eighth Ministry of British Columbia, as at Oct. 21, 1966

(Party standing at latest General Election, Sept. 12, 1966: 33 Social Credit, 16 New Democratic Party and 6 Liberal.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier, President of the Council and Minister of Finance.....	Hon. WILLIAM ANDREW CECIL BENNETT.....	Aug. 1, 1952	{Aug. 1, 1952 Aug. 1, 1952 Feb. 15, 1954
Provincial Secretary and Minister of Social Welfare.....	Hon. WESLEY DREWETT BLACK..	Aug. 1, 1952	{Aug. 1, 1952 Mar. 20, 1959
Attorney-General and Minister of Commercial Transport.....	Hon. ROBERT WILLIAM BONNER..	Aug. 1, 1952	{Aug. 1, 1952 Mar. 20, 1964
Minister of Lands, Forests, and Water Resources.....	Hon. RAY GILLIS WILLISTON.....	Apr. 14, 1954	Mar. 30, 1962
Minister of Agriculture.....	Hon. FRANCIS XAVIER RICHTER..	Nov. 28, 1960	Nov. 28, 1960
Minister of Mines and Petroleum Resources.....	Hon. DONALD LESLIE BROTHERS..	Mar. 20, 1964	Mar. 20, 1964
Minister of Highways.....	Hon. PHILIP ARTHUR GAGLARDI..	Aug. 1, 1952	Mar. 15, 1955
Minister of Labour and Minister of Education.....	Hon. LESLIE RAYMOND PETERSON..	Sept. 27, 1956	Nov. 28, 1960
Minister of Industrial Development, Trade, and Commerce.....	Hon. RALPH RAYMOND LOFFMARK..	Mar. 20, 1964	Mar. 20, 1964
Minister of Municipal Affairs.....	Hon. DANIEL ROBERT JOHN CAMPBELL.....	Mar. 20, 1964	Mar. 20, 1964
Minister of Health Services and Hospital Insurance.....	Hon. ERIC CHARLES FITZGERALD MARTIN.....	Aug. 1, 1952	Mar. 20, 1959
Minister of Public Works.....	Hon. WILLIAM NEELANDS CHANT..	Mar. 15, 1955	Mar. 15, 1955
Minister of Recreation and Conservation...	Hon. WILLIAM KENNETH KIERNAN	Aug. 1, 1952	Mar. 20, 1964

### Subsection 11.—Yukon Territory and Northwest Territories

**Yukon Territory.**—The Yukon was created a separate Territory on June 13, 1898 (see p. 82). Provision is made for a local government administered by a Commissioner appointed by the Governor in Council. There is an elected Council of seven members (1961) which usually meets twice a year in Whitehorse, the seat of local government; the Council elects its own speaker. The Commissioner administers the government under

instructions from the Governor in Council or the Minister of Indian Affairs and Northern Development. The Commissioner in Council has power to make ordinances dealing with the imposition of local taxes, sale of liquor, preservation of game, establishment of territorial offices, maintenance of municipal institutions, issue of licences, incorporation of companies, solemnization of marriage, property and civil rights, and generally all matters of a local nature in the Territory. The Commissioner and Council in office on June 30, 1966 were elected in 1964 for a three-year term.

#### GOVERNMENT OF THE YUKON TERRITORY

(as at June 30, 1966)

<b>Commissioner</b> .....	G. R. CAMERON
<b>Members of the Council—</b>	
Carmacks-Kluane.....	ROBERT D. MACKINNON
Dawson.....	GEORGE O. SHAW (Speaker)
Mayo.....	FRANK G. SOUTHAM
Watson Lake.....	DONALD G. TAYLOR
Whitehorse East.....	HERBERT E. BOYD
Whitehorse North.....	JOHN KENNETH THOMPSON
Whitehorse South.....	J. WATT
<b>Officers of the Council—</b>	
Territorial Secretary and Clerk of the Council.....	H. J. TAYLOR
Territorial Treasurer.....	K. MCKENZIE
Legal Adviser.....	C. P. HUGHES

The Northern Administration Branch, Department of Indian Affairs and Northern Development, has the responsibility for the general administration of the natural resources of the Yukon Territory, except game. The Department maintains lands and mining offices at four points in the Territory. Other departments and agencies of the Federal Government maintaining offices in Yukon Territory include: the Department of Justice, the Royal Canadian Mounted Police, the Department of National Defence, the Department of Energy, Mines and Resources, the Department of National Revenue, the Department of Transport, the Post Office Department, the Department of Agriculture, the Department of Public Works, the Department of Fisheries, and the (now) Department of Manpower and Immigration.\*

**Northwest Territories.**—As reconstituted on Sept. 1, 1905, the Northwest Territories comprise: (1) all that part of Canada north of the 60th parallel of north latitude, except the portions thereof within the Yukon Territory and the Provinces of Quebec and Newfoundland; and (2) the islands in Hudson Bay, James Bay and Ungava Bay, except those islands within the Provinces of Manitoba, Ontario and Quebec.

The Northwest Territories Act (RSC 1952, c. 331) provides for the appointment of a Commissioner to administer the government of the Territories under instructions given from time to time by the Governor in Council or the Minister of Indian Affairs and Northern Development. The Northwest Territories Act, as amended, also provides for a Council of nine members, four of whom are elected in the Mackenzie District and five of whom are appointed by the Governor in Council. The Commissioner in Council has legislative powers respecting such matters as direct taxation, establishment and tenure of territorial offices, municipal institutions, controverted elections, licences, incorporation of companies, property and civil rights, administration of justice, game, education, hospitals and generally all matters of a local or private nature. The Council meets once each year in the Terri-

\* Further information on officials of various Federal Government departments serving the Yukon Territory may be obtained from the Director, Northern Administration Branch, Department of Indian Affairs and Northern Development, Ottawa.



tories and at least once each year in Ottawa which is the seat of government. The resources, except game, remain under the control of the Federal Government. The administration of legislation passed by the Commissioner in Council and the maintenance of resources under federal legislation are conducted by the Northern Administration Branch of the Department of Indian Affairs and Northern Development. Administrative offices are located at a number of centres in the Territories including Fort Smith, Yellowknife, Hay River, Inuvik and Frobisher Bay.

#### COUNCIL OF THE NORTHWEST TERRITORIES

(as at June 30, 1966)

<b>Commissioner</b> .....	B. G. SIVERTZ
<b>Deputy Commissioner</b> .....	STUART M. HODGSON
<b>Members of the Council—</b>	
Appointed.....	STUART M. HODGSON HUGH CAMPBELL ROBERT N. HARVEY DR. FRANK VALLÉE ABRAHAM OKPIK
Elected—	
Mackenzie North.....	PETER BAKER
Mackenzie South.....	ROBERT PORRITT
Mackenzie River.....	J. W. GOODALL
Mackenzie Delta.....	LYLE R. TRIMBLE
<b>Officers of the Council—</b>	
Secretary.....	F. H. MURPHY
Legal Adviser.....	DR. HUGO FISCHER

In May 1965, the Minister of Indian Affairs and Northern Development announced the establishment of an Advisory Commission on the Development of Government in the Northwest Territories to study the practical problems involved, seek the views of northern residents and recommend to the Federal Government the steps required to give a greater measure of self-government to the Northwest Territories. The Commission is an impartial, fact-finding group, its three members being drawn from fields outside Government. The Commission was to present its report in the autumn of 1966.

### Section 3.—Municipal Government\*

The British North America Act of 1867 placed municipal government in Canada under the control of the provincial legislatures. The powers and responsibilities of municipalities are those delegated to them by statutes passed by their respective provincial legislatures. Some of these statutes apply to all municipalities within a province, some to a certain type or group and many to one municipality only. The types of municipal organization in existence and the nature of the municipal services provided vary greatly from region to region and are adjusted from time to time to meet changing needs and conditions.

In addition to the well-known types of organized municipalities—cities, towns, villages, counties, etc.—there are various other forms of local government organization. Certain municipal government bodies encompass a number of municipalities or parts of municipalities. For example, special district authorities (greater water and sewerage and drainage districts, irrigation districts and health units) may provide services to a number of municipalities. Similarly, metropolitan government authorities provide certain services to a number of area municipalities. In some provinces, the more sparsely settled areas do not

\* Revised (as at Jan. 1, 1966) in the Governments Division, Financial Statistics Branch, Dominion Bureau of Statistics.

have organized municipalities. Instead, they are divided into local improvement districts, local government districts or special areas in which the local government services are administered by officials appointed by the provincial Departments of Municipal Affairs.

The major local revenue source available to municipalities is the taxation of real property. It is supplemented in varying degrees by taxation of personal property, business persons (poll taxes) and tenants. In two provinces municipalities may levy an amusement tax, in three they may impose sales taxes on specific commodities. Miscellaneous general revenue is derived from licences, permits, rents, concessions, franchises and fines. A great many municipalities operate utilities for the provision of water and, in many instances, electricity, gas, transportation, telephone and other services. These sometimes provide surplus funds that may become available to help pay for other municipal services. On the other hand, expenditures of municipalities often include provision for the deficits of their utilities and enterprises.

In differing degrees and with varying provincial assistance, municipalities are responsible for the following services: protection to persons and property through police and fire forces, courts and local gaols, and inspection services; roads and streets; sanitation; certain health and welfare services; and some recreation and other community services. In most provinces, municipalities are responsible for levying and collecting local education taxes on behalf of the local schools, and often for borrowing capital funds for school construction. Local administrative responsibility for education lies with boards of trustees separate from the councils that govern municipalities (except Alberta; see p. 122).

All provinces give some form of financial assistance to their municipalities. This may be in the form of monetary grants, such as unconditional subsidies which may be spent as the municipalities see fit, or grants-in-aid of specific services that are the municipal responsibility. The provinces may also make loans to municipalities for capital purposes or guarantee the bonds issued by the municipalities. Other forms of indirect assistance are the resumption by the provincial governments of responsibilities formerly delegated to the municipalities and the extension of municipal taxing privileges into what were formerly considered to be provincial revenue fields. The provinces also provide various technical and consultative services to their municipalities.

The following paragraphs describe municipal organization in each province and in the Territories as at Jan. 1, 1966. In Table 34 (which gives the number of each type of municipality in each province) all fully incorporated cities, towns and villages are regarded as 'urban' municipalities.

**Newfoundland.**—The Province of Newfoundland has two cities—St. John's and Corner Brook. A number of the province's many settlements have been organized into 54 towns, four rural districts, eight local improvement districts and 60 local government communities. The towns, rural districts and local improvement districts operate under the Local Government Act; towns and rural districts have elected councils and local improvement districts have appointed trustees. Local government communities established under the Community Councils Act in the smaller settlements have limited powers and functions. There are no rural municipalities in the usual sense. Only about one fifth of 1 p.c. of the total area is municipally organized. Municipalities are supervised by the Department of Municipal Affairs and Supply.

**Prince Edward Island.**—In this province, one city and seven towns have been incorporated under special Acts and 21 villages have been established under the Village Services Act. There is no municipal organization for the remainder of the province although it is divided into school sections which have elected school boards.

**Nova Scotia.**—Municipal organization in Nova Scotia covers the whole of the province. The three cities operate under special charters and special legislation. Thirty-nine towns operate under the Town Incorporation Act but there are no municipalities incorporated as villages. Cities and towns are independent of counties. The rural area is divided into 18 counties which, in themselves, do not represent units of local government. However, 12 of these counties each comprise one municipality and the other six each comprise two municipalities, making a total of 24 rural municipalities. Supervision of municipalities is exercised through the Department of Municipal Affairs.

**New Brunswick.**—This province is divided into 15 counties which are incorporated municipalities and have direct powers of local self-government as rural municipalities, although certain of their powers often apply in both rural and urban municipalities. The six cities have special charters and the 21 towns operate under the Towns Incorporation Act. There is also one village. There are 60 local improvement districts and 10 commissions within the counties but outside the cities, towns and village; these have been incorporated for the provision of limited municipal services. The Department of Municipal Affairs exercises supervision.

**Quebec.**—Municipal divisions in Quebec embrace the more thickly settled areas comprising about one third of the province and the remainder is governed by the province as 'territories'. The organized area is divided into 74 county municipalities which are divided again into local municipalities and designated as village, township or parish municipalities or simply as municipalities. The counties as such have no direct powers of taxation. Funds to finance the services falling within their jurisdiction are provided by the municipalities forming part thereof. Parts of some counties are not yet organized into incorporated units of local government, being in outlying areas and having little or no population. There are 316 villages and 1,102 townships and parishes. A small number of these are independent of the counties in which they are located. The Municipal Code governs local municipalities and the 62 cities and 178 towns have special Acts. The supervision and assistance of municipalities is through the Department of Municipal Affairs and the Quebec Municipal Commission. Municipal statistics are gathered by the Quebec Bureau of Statistics.

The active functions of the Montreal Metropolitan Corporation are limited because of the ability of the area municipalities to fulfil their own obligations. The Corporation services borrowings contracted before Apr. 1, 1961, when the Montreal Metropolitan Boulevard became a provincial responsibility, and apportions costs incurred in the area municipalities for streets constructed on each side of the Boulevard.

**Ontario.**—Slightly more than one tenth of the area of Ontario is municipally organized and the remainder is governed entirely by the provincial government. The older settled section of the province is divided into 43 counties, five of which are united with others for administrative purposes. Each county, although it is an incorporated municipality, is comprised of the towns, villages and townships situated within its borders and these provide its revenue. There are 33 cities, 155 towns, 158 villages, 571 townships and 18 improvement districts in the province. Some of each are located in the northern districts which are not organized into counties. Supervisory control of municipalities is exercised by the Department of Municipal Affairs and the Ontario Municipal Board under the Municipal Act and other Acts governing aspects of municipal government.

The Municipality of Metropolitan Toronto, in existence since Jan. 1, 1954, encompasses one city, four towns, three villages and five townships. The Metropolitan Council is composed of the mayor, two senior controllers and the senior alderman of each of the nine wards of the City of Toronto, and the head of the council of each of the 12 suburban municipalities. The chairman is elected by the councillors and need not be a councillor



of an area municipality. The Council has jurisdiction over assessments, water supply, sewerage works, metropolitan road systems, transit, municipal housing developments, community planning, parks and recreation areas, the Court House, certain health and welfare services and the correlation of educational facilities in the metropolitan area. It also controls a unified metropolitan police force and a metropolitan licensing commission. Expenditures are financed by a levy apportioned among the area municipalities. All borrowing of the area municipalities for capital purposes is done by the Municipality of Metropolitan Toronto.

**Manitoba.**—Manitoba has nine cities, which derive their powers from special Acts and do not come under the supervision of the Department of Municipal Affairs. The Department supervises the 36 towns, 41 villages and 110 rural municipalities under the Municipal Act. There are local government districts in settled areas not within municipalities where the province has placed a resident administrator to carry out the functions of a municipal council. The unorganized areas are the direct responsibility of the provincial government.

The Metropolitan Corporation of Greater Winnipeg has been in existence since Nov. 1, 1960. Its council is separate and distinct from those of the 16 area municipalities. The councillors are elected as individuals from ten new districts, each containing approximately the same number of voters. The council has jurisdiction over planning, zoning, land development, assessments, arterial roads, water supply, sewage disposal, transit and other services. It borrows money only for its own undertakings and leaves to its area municipalities the responsibility for welfare, police, fire protection and other services. Expenditures are financed by a proportion of the business and other taxes levied on industrial or commercial property by the area municipalities and by a uniform levy on the equalized assessment of all taxable real property in the area municipalities.

**Saskatchewan.**—All municipalities in Saskatchewan derive their powers from general Acts that are designated with the name of the type of municipality. There are 11 cities, 123 towns, 363 villages and 294 rural municipalities. The area so organized consists of most of the southern two fifths of the province: the remainder of this portion is administered for local purposes by the province in unincorporated local improvement districts. The northern three fifths is sparsely populated and without local government, although some municipal services are provided by the province through operation of the Northern Administration District. Municipalities are supervised by the Department of Municipal Affairs.

**Alberta.**—The whole Province of Alberta is under some type of municipal organization. The province has an Act applying to each type of municipality and under these Acts the Department of Municipal Affairs supervises the nine cities, 93 towns, 167 villages, 21 municipal districts and 28 counties. The latter administer schools as well as municipal services. Municipal government for the 51 improvement districts and three special areas is provided by the Department of Municipal Affairs.

**British Columbia.**—Less than one half of 1 p.c. of the area of British Columbia is organized into municipalities. Additional small areas have sufficient population to require administration of local activities by the provincial government. There are 32 cities, ten towns, 58 villages and 36 districts; the latter are mostly rural municipalities although there are some districts adjacent to the principal cities of Victoria and Vancouver that are largely urban in character. It should be emphasized, however, that the application of the name 'city' is somewhat different from the commonly accepted meaning, in that several of them have populations of fewer than 3,000 and perhaps one half or more would not normally be incorporated as cities in another province. Municipalities are supervised by the Department of Municipal Affairs.

In addition to the above types of municipalities, there are unincorporated improvement districts that have been set up to provide certain municipal services such as protection, waterworks, irrigation, etc. These districts are under the supervision of the Department of Lands, Forests, and Water Resources.

**Yukon and Northwest Territories.**—There are two cities, Whitehorse and Dawson, and one unincorporated town, Mayo, in the Yukon Territory and two towns, Yellowknife and Hay River, in the Northwest Territories, all of which provide some municipal services to their local areas. These are not shown in Table 34.

**34.—Municipalities classified by their Official Designation and Statistical Classification, by Province, as at Jan. 1, 1966**

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
OFFICIAL DESIGNATION <sup>1</sup>											
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Local municipalities.....	128	29	66	103 <sup>3</sup>	1,659	936	197	791	318	136	4,363
Metropolitan corporations...	...	...	...	...	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>6</sup>	...	...	...	3
Cities.....	2	1	3	6	62	33	9	11	9	32	168
Towns.....	66 <sup>7</sup>	7	39	21	178	155	36	123	93	10	728
Villages.....	60 <sup>8</sup>	21	...	1	316	158	41	363	167	58	1,185
Rural <sup>9</sup> .....	...	...	24	75 <sup>2</sup>	1,102	589 <sup>10</sup>	110 <sup>11</sup>	294 <sup>12</sup>	49 <sup>13</sup>	36 <sup>14</sup>	2,279
Quebec and Ontario counties	...	...	...	...	74	38	...	...	...	...	112
<b>Totals, Incorporated Municipalities.....</b>	<b>128</b>	<b>29</b>	<b>66</b>	<b>103</b>	<b>1,733</b>	<b>974</b>	<b>197</b>	<b>791</b>	<b>318</b>	<b>136</b>	<b>4,475</b>
STATISTICAL CLASSIFICATION <sup>2</sup>											
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Municipalities in Metropolitan Areas <sup>15</sup> .....	2	...	3	5	109	71	17	...	7	20	234
Urban.....	2	...	2	3	90	43	10	...	3	8	161
Rural.....	...	...	1	2	19	28	7	...	4	12	73
Other urban municipalities..	126	29	40	25	467	304	77	497	266	92	1,923
Other rural municipalities..	...	...	23	73	1,083	561	103	294	45	24	2,206
Semi-urban.....	...	...	...	...	...	57 <sup>16</sup>	...	...	...	...	57
Other.....	...	...	23	73	1,083	504	103	294	45	24	2,149
Quebec and Ontario counties	...	...	...	...	74	38	...	...	...	...	112
<b>Totals, Incorporated Municipalities.....</b>	<b>128</b>	<b>29</b>	<b>66</b>	<b>103</b>	<b>1,733</b>	<b>974</b>	<b>197</b>	<b>791</b>	<b>318</b>	<b>136</b>	<b>4,475</b>

<sup>1</sup> Municipalities grouped according to their official nomenclature, which is roughly indicative of size and nature (see footnote <sup>9</sup>).

<sup>2</sup> Municipalities grouped under the classification devised by the Dominion-Provincial Conferences on Municipal Statistics designed to bring municipalities into comparable groups for statistical presentation.

<sup>3</sup> Includes the 60 local improvement districts; excludes commissions.

<sup>4</sup> The Montreal Metropolitan Corporation.

<sup>5</sup> The Municipality of Metropolitan Toronto.

<sup>6</sup> The Metropolitan Corporation of Greater Winnipeg.

<sup>7</sup> Designated by the province as towns (54), rural districts (4) and local improvement districts (8); all operate under the same Act.

<sup>8</sup> Classified by the province as community councils.

<sup>9</sup> Rural municipalities are designated by different names in the different provinces.

<sup>10</sup> Includes the 18 improvement districts.

<sup>11</sup> Includes the 3 units of self-government known as suburban municipalities; excludes the unincorporated local government districts.

<sup>12</sup> Excludes the 12 unincorporated local improvement districts.

<sup>13</sup> Includes the 28 county municipalities; excludes the unincorporated improvement districts and the special areas.

<sup>14</sup> Excludes the unincorporated improvement districts, the local districts and the new regional districts.

<sup>15</sup> Includes municipalities shown wholly or partly in metropolitan areas by the 1961 Census, with subsequent revisions to take care of annexations, etc. Included in "Urban" are the Montreal Metropolitan Corporation, the Municipality of Metropolitan Toronto and the Metropolitan Corporation of Greater Winnipeg.

<sup>16</sup> Classified by the province as suburban or semi-urban.

## Section 4.—Federal and Provincial Royal Commissions

**Federal Royal Commissions Established.**—Royal Commissions established from May 1, 1965 to June 30, 1966 under Part I of the Federal Inquiries Act are given here in continuation of those previously reported in the Year Books beginning with the 1940 edition, pp. 1108-1110. Any Commission established between June 30, 1966 and the date of going to press will be found in the Register of Official Appointments, Chapter XXVII, Part III.

<i>Nature of Commission</i>	<i>Chief Commissioner</i>	<i>Date Established</i>
To inquire into the marketing problems of the freshwater fish industry in the Provinces of Ontario, Manitoba, Saskatchewan and Alberta and in the Northwest Territories.	GEORGE H. McIVOR.....	July 9, 1965
To inquire into the increases in rates of pay for civil servants in Group D announced by the Government on July 16, 1965.	Judge JACOB CARROLL ANDERSON..	July 23, 1965
To inquire into working conditions in the Post Office Department.	Hon. Mr. Justice ANDRÉ MONTPETIT	Sept. 1, 1965
To inquire into the dealings of the Hon. Mr. Justice Léo A. Landreville with Northern Ontario Natural Gas Limited.	Hon. I. C. RAND.....	Jan. 19, 1966
To inquire into the complaints made by George Victor Spencer.	Hon. Mr. Justice D. C. WELLS....	Mar. 7, 1966
To inquire into matters relating to one Gerda Munsinger.	Hon. Mr. Justice W. F. SPENCE....	Mar. 14, 1966

**Reports of Federal Royal Commissions.**—Reports of Federal Royal Commissions issued during the period May 1, 1965 to June 30, 1966 were as follows:—

Report of Commission of Inquiry into allegations about improper inducements and pressures on counsel acting for the extradition of Lucien Rivard, established Nov. 25, 1964. Ottawa, June 1965. 149 p. \$1. (Cat. No. Z1-1964/2).

Report of Commission of Inquiry into circumstances surrounding the crash of Douglas DC-8F Aircraft CF-TJN at Ste. Thérèse de Blainville, Que., on Nov. 29, 1963, established Oct. 8, 1964. Ottawa, 1965. 41 p. 50¢. (Cat. No. Z1-1964/3).

Interim Report of Commission of Inquiry into increases in rates of pay for civil servants in Group D, established July 23, 1965. Ottawa, August 1965. 15 p. 15¢. (Cat. No. Z1-1965/1-1).

Report of Commission of Inquiry as to the future of the Air Canada overhaul base at Winnipeg International Airport and related matters, established June 11, 1964. Ottawa, 1966. 175 p. Free. (Cat. No. Z1-1964/4).

**Provincial Royal Commissions.**—The following provincial Royal Commissions were established during the period May 1, 1965 to June 30, 1966:—

<i>Province and Nature of Commission</i>	<i>Chief Commissioner or Chairman</i>	<i>Date Established</i>
<b>NEWFOUNDLAND</b>		
*To inquire into economic prospects for Newfoundland.	GORDON PUSHIE.....	Dec. 11, 1964
To inquire into legislation governing the practice of accounting and auditing throughout the province.	Sir BRIAN DUNFIELD.....	Jan. 6, 1966
To inquire into minimum wage rates.....	..	Feb. 3, 1966
To inquire into the tax structure of the City of St. John's.	J. D. FRASER.....	Feb. 21, 1966
To inquire into food and drug costs.....	W. G. ADAMS.....	Mar. 3, 1966
To inquire into the pension plans applying to employees of the Government of Newfoundland and Labrador and the College of Fisheries and to teachers.	G. T. DYER.....	Apr. 22, 1966
<b>NOVA SCOTIA</b>		
To inquire into the milk industry.....	R. L. MACDOUGALL.....	May 9, 1966

\* Appointed prior to May 1, 1965 but omitted from the list published in the 1966 Year Book.



<i>Province and Nature of Commission</i>	<i>Chief Commissioner or Chairman</i>	<i>Date Established</i>
<b>NEW BRUNSWICK</b>		
Committee on the financing of higher education in New Brunswick.	Dr. JOHN J. DEUTSCH.....	Feb. 9, 1966
Inquiry into and concerning all negotiations and transactions between Her Majesty the Queen in right of the Province and Coastal Industries Limited and St. Regis Paper Company (Canada) Ltd. from Jan. 1, 1964 to Dec. 31, 1965.	Mr. Justice RALPH V. LIMERICK...	Feb. 16, 1966
<b>ONTARIO</b>		
To inquire into and make recommendations concerning the failure of Atlantic Acceptance Corporation Limited to meet its obligations.	Mr. Justice H. S. HUGHES.....	Aug. 12, 1965
<b>MANITOBA</b>		
The Totogan Farms Limited Commission to inquire into circumstances surrounding acquisition by the Crown of certain property.	Mr. Justice R. G. B. DICKSON.....	Feb. 2, 1966
<b>BRITISH COLUMBIA</b>		
To inquire into the redefinition of electoral districts.	Dr. H. F. ANGUS.....	Aug. 5, 1965
To inquire into automobile insurance rates.....	Mr. Justice R. A. B. WOOTTON.....	Jan. 25, 1966

## PART III.—ADMINISTRATIVE FUNCTIONS OF THE FEDERAL GOVERNMENT

### Section 1.—Financial Administration\*

The financial affairs of the Government of Canada are administered and controlled under the fundamental principles that no tax shall be imposed and no money shall be spent without the authority of Parliament and that expenditures shall be made only for the purposes authorized by Parliament. The most important constitutional provisions relating to Parliament's control of finances are contained in the British North America Act; this Act provides that all taxing and appropriating measures must originate in the House of Commons and all requests for grants must come from the Crown through responsible Ministers, and for such requests the Government is solely responsible. In practice, financial control is exercised through a budgetary system based on the principle that all the financial needs of the Government for each fiscal year be considered at one time so that both the current condition and the prospective condition of the public treasury are clearly in evidence.

**Estimates and Appropriations.**—The co-ordination of the Estimates process is carried out by the Treasury Board. This Board is a separate department of government, its Minister having the designation of President of the Treasury Board. In addition to the President, the Board consists of five other Privy Councillors and the Minister of Finance who serves *ex officio* as a member. Under the Financial Administration Act, the Board has a statutory duty to advise the Governor in Council on matters relating to finance, estimates, expenditures, financial commitments, establishments, revenues, accounts, terms and conditions of employment of persons in the public service and general administrative policy in the public service (see also p. 141).

The Estimates for any one fiscal year are determined as a result of a two-phased review by the Treasury Board of departmental proposals for expenditure. In the spring of each year, at the request of the Secretary of the Treasury Board, each department submits to the Treasury Board a forecast of Estimates for the current and following four fiscal years.

\* Prepared under the direction of H. R. Balls, Comptroller of the Treasury, Ottawa.

During the summer, a review of the programs giving rise to these Estimates forecasts is carried out by the Treasury Board as a result of which tentative Estimates figures are determined for each department for the coming fiscal year. The Board reviews each departmental program submission in the light of probable revenues and governmental policy generally, usually consulting the appropriate Minister and officials. Each department, using these figures as guidelines, develops in detail its manpower and other resource requirements and submits them to the Treasury Board late in October in the form of Main Estimates for the fiscal year beginning Apr. 1. These Estimates are analysed by the Treasury Board staff and compared with the guidelines determined during the spring program review. The Board reviews each departmental submission in the light of the current budgetary outlook. The Estimates may be rejected or reduced and unresolved differences of opinion may be referred to Cabinet for decision. When the Board is satisfied with their substance and form, the Main Estimates are submitted to the Cabinet and later to the Governor in Council for approval and are then laid before the House of Commons.

On motion of the Minister of Finance, the Estimates are referred for consideration to the Committee of Supply, which is a committee of the whole House. However, the Estimates of certain departments may first go to select committees of the House; these, after being reported upon to the House, are referred back to the Committee of Supply. The consideration of the Estimates usually extends over a period of several months. Each vote is the subject of a separate resolution and Members of the House may question the Minister on any item but no private member or Minister on his own responsibility can introduce any new expenditure proposal or any amendment to an Estimates item that would result in an increased expenditure. When the examination of the individual items has been completed, the Estimates are referred to the Committee of Ways and Means, also a committee of the whole House, which is asked to consider a resolution for the introduction of a Bill to appropriate money to meet the requirements as approved in the Committee of Supply. When such resolution is passed, an appropriation Bill is introduced which, when approved by the House of Commons and the Senate, is given Royal Assent and becomes law. Grants in the Appropriation Acts are grants to the Crown and funds cannot be disbursed until the supply voted by Parliament to the Crown is released by a warrant prepared on an Order of the Governor in Council and signed by the Governor General.

As weeks or months may elapse after the commencement of the fiscal year before the main Appropriation Act is passed, funds are made available for the conduct of government functions by the passage of an interim supply Bill granting one sixth of the total of each item in the Estimates, equivalent to two months' supply. Additional interim supply Bills may be introduced if required, awaiting Parliament's detailed consideration of the Estimates. In addition, to cover any new and unforeseen requirements that might arise during the year, Supplementary Estimates are usually introduced after some months of the fiscal year have elapsed, and just prior to the end of the fiscal year further Supplementary Estimates are laid before the House. These Supplementary Estimates are dealt with in the same manner as the Main Estimates.

In addition to the expenditure items included in the annual Appropriation Acts, there are a number of items, such as interest on the public debt, family allowances and old age assistance payments, which have been authorized under the provisions of other statutes. Although it is not necessary for Parliament to pass annually on these items, they are included in the Main Estimates for purposes of information. Statutory provision is also made for the expenditure of public money in emergencies where no specific parliamentary appropriation is available. Under the Financial Administration Act, the Governor in Council, upon the report of the Minister of Finance that there is no appropriation for the expenditure and upon the report of the appropriate Minister that the expenditure is urgently required, may order the issuance of a special warrant authorizing disbursement of the amount required. Such warrants may be issued only when Parliament is not in session and every warrant is published in the *Canada Gazette* within thirty days of issue.

The Fire Losses Replacement Account Act also provides for emergency expenditures for the urgent repair or replacement of property destroyed or damaged by fire, where there is not sufficient money available in the appropriation for the Service suffering loss. Such amounts must be charged subsequently to an appropriation or included in the Estimates for the department or agency concerned.

In addition, disbursements are made for purposes not reflected in the budgetary accounts but recorded in the Government's statement of assets and liabilities, such as loans to and investments in Crown corporations, loans to international organizations and to national, provincial and municipal governments, and loans to veterans. There are also disbursements in connection with deposit and trust accounts and annuity, insurance and pension accounts which the Government holds or administers, including the old age security fund which is operated as a separate entity. Although these disbursements are excluded from the calculation of the annual budgetary surplus or deficit, they are all subject to appropriation by Parliament either in the annual Appropriation Acts or in other legislation.

**The Budget.**—Some time after the Main Estimates have been introduced, the Minister of Finance presents his annual Budget Speech in the House of Commons. Budget papers, tabled for the information of Parliament at least one day prior to the presentation of the Budget, include a general review of economic conditions and a preliminary review of the Government's accounts for the fiscal year then ending. The Budget Speech itself reviews the state of the national economy and the financial operations of the Government for the previous fiscal year and gives a forecast of the probable financial requirements for the year ahead, taking into account the Main Estimates and making allowances for Supplementary and further Supplementary Estimates and probable lapsings. At the close of his address, the Minister tables the formal resolutions for changes in the existing tax rates and customs tariff which, in accordance with parliamentary procedure, must precede the introduction of any money Bills. These resolutions give notice of the amendments which the Government intends to ask Parliament to make in the taxation statutes. However, if a change is proposed in a commodity tax, such as a sales tax or excise duty on a particular item, it is usually made effective immediately; the legislation, when passed, is made retroactive to the date of the Speech.

The Budget Speech is delivered in support of a motion that the House go into Committee of Ways and Means, the debate on which usually lasts for several weeks. With the passage of the motion, the way is clear for the consideration of the Budget resolutions and, when these have been approved by the Committee, a report to this effect is made to the House and the tax Bills are introduced and thereafter dealt with in the same manner as all other government financial legislation.

**Revenues and Expenditures.**—The administrative procedures whereby revenues are collected and expenditures are made are, for the most part, contained in the Financial Administration Act.

With respect to revenues, the basic requirement is that all public money shall be paid into the Consolidated Revenue Fund, which is defined as the aggregate of all public money on deposit to the credit of the Receiver General. The Treasury Board has prescribed detailed regulations governing the receipt and deposit of such money. For the actual custody of public money, use is made of the Bank of Canada and the chartered banks. Balances are allocated to the various chartered banks on the basis of a percentage allocation established by agreement among all the banks and communicated to the Department of Finance by the Canadian Bankers' Association. The daily operating account is maintained with the Bank of Canada and the division of funds between it and the chartered banks takes into account the immediate cash requirements of the Government and consideration of monetary policy. The Minister of Finance may purchase and hold securities of, or guaranteed by, Canada and pay for them out of the Consolidated Revenue Fund or may



sell such securities and pay the proceeds into the Fund. Thus, if cash balances in the Fund are in excess of requirements for the immediate future they may be invested in interest-earning assets. In addition, the Minister of Finance has established a purchase fund to assist in the orderly retirement of the public debt.

The principal agencies exercising control over expenditures are the Treasury Board (previously described) and the Comptroller of the Treasury, who has the status of a deputy head but is an officer of the Department of Finance, with representatives who act as accounting and disbursing officers stationed in all the principal departments.

The Treasury Board exercises detailed central control over the budgets, programs and staffs of departments and over financial and administrative matters generally. Although the most important part of this control function is exercised during the consideration of the Estimates, the Board maintains continuous control over certain types of expenditure to ensure that the scale of activities and commitments for the future is held within approved policies, that departments follow uniform, efficient and economical practices, and that the Government is informed of and approves any major development of policy or significant transaction that might give rise to public or parliamentary criticism.

To ensure that the decisions of Parliament, the Government and Ministers in regard to expenditures are enforced, there is a centralized accounting and disbursing system. The Financial Administration Act provides that no payment shall be made out of the Consolidated Revenue Fund without the authority of Parliament and no charge shall be made against an appropriation except upon the requisition of the appropriate Minister or a person authorized by him in writing. These requisitions, and certificates that the work has been performed, the material supplied or the services rendered and that the price charged is reasonable or according to contract, together with such documents as may be required, are presented to the Comptroller of the Treasury. If the charge is a lawful one against the appropriation and does not exceed the amount of the appropriation or reduce it below the amount necessary to meet other commitments, and does not contravene any applicable legislative or executive requirements, the Comptroller will make the payment. However, if he declines to make a payment, disallows an item in an account or refuses to give a certificate, the Minister concerned may report the circumstances to the Treasury Board for decision and the Board may confirm or overrule the action of the Comptroller. The Comptroller may transmit to the Board any requisition with respect to which he desires its direction and the Board may order that payment be made or refused.

At the beginning of each fiscal year each department submits to the Treasury Board, through the Comptroller, a division or allotment of each item included in its Estimates. Once approved by the Board, these allotments cannot be varied or amended without the approval of the Board and expenditures charged to appropriations are limited to such allotments. To avoid over-expenditures within a fiscal year, the Comptroller records and controls commitments due to come in course of payment within the year for which Parliament has provided or has been asked to provide appropriations. The Government, through the Treasury Board and the Comptroller, also maintains careful control over commitments made under contract that will fall due in succeeding years, since it must be prepared in future to ask Parliament for appropriations to cover them. Any unexpended amounts in the annual appropriations lapse at the end of the year for which they are granted, but for thirty days subsequent to Mar. 31 payments may be made and charged to the previous year's appropriations for debts incurred prior to the end of that fiscal year.

Under the Financial Administration Act, every payment pursuant to an appropriation is made under the control and direction of the Comptroller by cheque drawn on the account of the Receiver General or by such other instrument as the Treasury Board may direct. In practice, the paid Comptroller's cheques are cleared daily by the chartered banks through the Bank of Canada to the Cheque Adjustment Branch of the Comptroller's Office, and reimbursement is made by means of a cheque drawn on the Receiver General's account with the Bank of Canada.

**Public Debt.**—In addition to the collection and disbursement of public money for budgetary and non-budgetary purposes, the Government receives and disburses substantial sums in connection with its public debt operations. The Minister of Finance is authorized to borrow money by the issue and sale of securities at such rate of interest and subject to such terms and conditions as the Governor in Council may approve. Although the specific authority of Parliament is required for new borrowings, the Financial Administration Act authorizes the Governor in Council to approve the borrowing of such sums of money as are required for the redemption of maturing or called securities and, to ensure that the Consolidated Revenue Fund will be sufficient to meet lawfully authorized disbursements, he may also approve the temporary borrowing of such sums as are necessary for periods not exceeding six months. The Bank of Canada acts as the fiscal agent of the Government in the management of the public debt.

**Accounts and Financial Statements.**—Under the Financial Administration Act, accounts are kept to show the revenues of Canada, the expenditures made under and the commitments chargeable against each appropriation, the other payments into and out of the Consolidated Revenue Fund, and such of the assets and direct and contingent liabilities as the Minister of Finance believes are required to give a true and fair view of the financial position of Canada. The statement of assets and liabilities is designed to disclose the amount of the net debt, which is determined by offsetting against the gross liabilities only those assets regarded currently as readily realizable or interest- or revenue-producing. Fixed capital assets, such as government buildings and public works, are charged to budgetary expenditures at the time of acquisition or construction and are shown on the statement of assets and liabilities at a nominal value of \$1.

Annually, on or before Dec. 31 or, if Parliament is not then in session, within fifteen days after the commencement of the ensuing session, the *Public Accounts* is laid before the House of Commons by the Minister of Finance. The *Public Accounts* contains a survey of the financial transactions of the fiscal year, statements of the revenues and expenditures for the year and of the assets and direct and contingent liabilities as at the end of the year, together with such other accounts and information as are necessary to show the financial transactions and financial position of Canada or which are required by law to be reported in the *Public Accounts*. Monthly financial statements are also published in the *Canada Gazette*.

**The Auditor General.**—The Government's accounts are subject to an independent examination by the Auditor General who is an officer of Parliament. With respect to expenditures, this examination is a post-audit for the purposes of reporting whether the accounts have been faithfully and properly kept and whether the money has been expended for the purposes for which it was appropriated by Parliament and the expenditures have been made as authorized; any audit before payment is the responsibility of the Comptroller of the Treasury. With respect to revenues, the Auditor General is required to ascertain that all public money is fully accounted for and that the rules and procedures applied are sufficient to ensure an effective check on the assessment, collection and proper allocation of the revenue. With respect to public property, he is required to satisfy himself that essential records are maintained and that the rules and procedures applied are sufficient to safeguard and control such property. The Auditor General reports to Parliament the results of his examination, calling attention to any case which he considers should be brought to the notice of the House. He also reports to Ministers, the Treasury Board or the Government any matter which in his opinion calls for attention so that remedial action may be taken promptly.

**Public Accounts Committee.**—It is the usual practice to refer the *Public Accounts* and the *Auditor General's Report* to the Public Accounts Committee of the House of Commons, which may review them and report its findings and recommendations to the House of Commons.



## Section 2.—Departments, Boards, Commissions, etc.\*

The following paragraphs indicate the functions of the various departments of government and the special boards and commissions in connection with the work of government.

Although it is not possible, owing to the limitations of space, to enumerate in this Section the details of each service or the divisions or sections of all departments, the main branches are given along with those services that differ in some quality from the larger class of subjects handled by a department. The work of many of these departments and boards is given in detail in later Chapters of this volume. The Index will be useful in locating required information.

**Department of Agriculture.**—This Department was established in 1867 (SC 1868, c. 53) and undertakes work on all phases of agriculture. Research and experimentation are carried out by the Research Branch; the maintenance of standards and protection of products by the Production and Marketing Branch and the Health of Animals Branch; the Canada Grain Act, as it pertains to the inspection, weighing, storage and transportation of grain, is administered by the Board of Grain Commissioners; land reclamation and development is carried out by the Prairie Farm Rehabilitation Administration; and farm income security and price stability are provided under the Crop Insurance Act, the Prairie Farm Assistance Act, the Agricultural Stabilization Act and the Agricultural Products Board. The Farm Credit Corporation and the Board of Grain Commissioners report to Parliament through the Minister of Agriculture.

**Air Transport Board.**—The Air Transport Board was established in 1944 by amendment of the Aeronautics Act. The Board is responsible for the economic regulation of commercial air services in Canada and for advising the Minister in the exercise of his duties and powers under the Act in all matters relating to civil aviation. The regulatory function relates to Canadian air services within Canada and abroad, and to foreign air services operating into and out of Canada. It involves the licensing of all such services and the subsequent regulation of the licensees in respect of their economic operation and the provision of service to the public. The Board reports to Parliament through the Minister of Transport.

**Auditor General's Office.**—This Office originated in 1878 (SC 1878, c. 7) and currently functions under the Financial Administration Act (RSC 1952, c. 116). The Auditor General is responsible for examining accounts relating to the Consolidated Revenue Fund and to public property, and for reporting annually to the House of Commons the results of his examinations. He also audits the accounts of various Crown corporations and other instrumentalities.

**Board of Broadcast Governors.**—This Board, established under the provisions of the Broadcasting Act which was assented to on Sept. 6, 1958, is given authority to regulate radio and television broadcasting in Canada. The Board has authority to regulate the establishment and operation of both public and private broadcasting stations and networks of stations. Applications for licences to establish new broadcasting stations, for changes in the facilities of existing stations or for changes in the ownership or in the share structure of licensees are referred to the Board by the Minister of Transport for a recommendation before being dealt with. The Board has three full-time and twelve part-time members. The Secretary of State acts as spokesman for the Board in the Cabinet and the House of Commons.

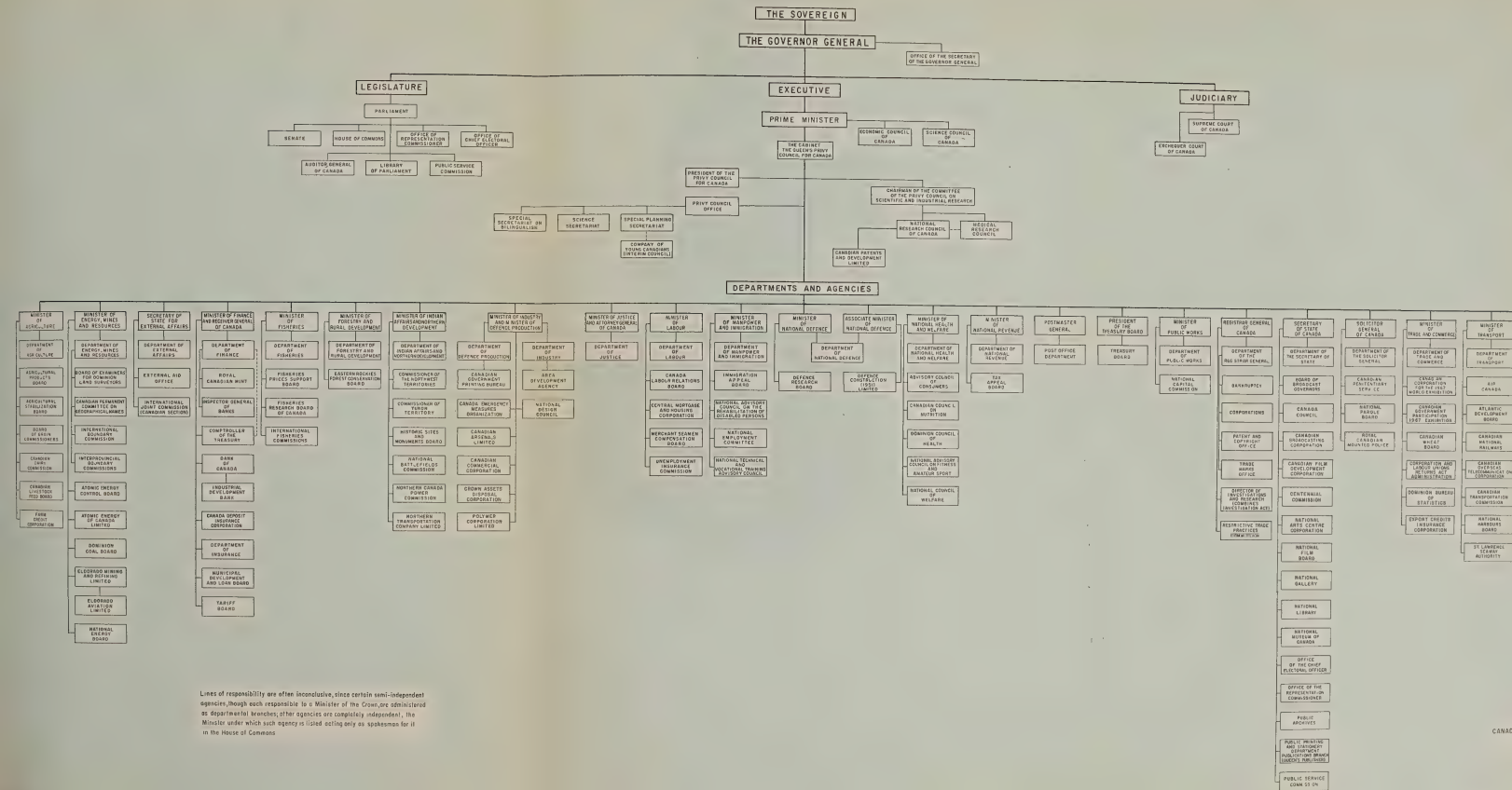
**Board of Grain Commissioners.**—Constituted in 1912 under the Canada Grain Act (RSC 1952, c. 25), the Board of Grain Commissioners for Canada provides general supervision over the physical handling of grain in Canada by licensing elevator operators, inspecting and weighing grain received at and shipped from terminal elevators, and other services. The Board, comprising a Chief Commissioner and two Commissioners, has authority to inquire into any matter relating to the grading and weighing of grain, deductions for dockage or shrinkage, deterioration of any grain during storage or treatment, unfair or discriminatory operation of a grain elevator, etc. The Board publishes its regulations in the *Canada Gazette* and reports to Parliament through the Minister of Agriculture.

**Board of Transport Commissioners for Canada.**—The powers of this Board, which was organized as the Board of Railway Commissioners in 1904, have been extended from time to time until today it has regulatory and judicial functions dealing with almost all aspects of railway activity including location, construction and operation of lines, rates and charges. It is also entrusted with the regulation of other transportation and communication agencies, including express companies, telegraph companies, telephone companies other than those provincially or municipally controlled, international bridges and tunnels and inland shipping. The Board reports to Parliament through the Minister of Transport.

\*As at Oct. 1, 1966; any major changes taking place between that date and the time of going to press will be carried in an Appendix to this volume. Also, the accompanying organization chart is brought up to the latest possible date before going to press; see lower right-hand corner.



THE GOVERNMENT OF CANADA





**Canada Emergency Measures Organization.**—This Organization was established in June 1957 to co-ordinate civil emergency planning at the federal level. An Order in Council, effective Sept. 1, 1959, completely revised assignments in the field of civil emergency planning giving responsibilities to 15 departments and agencies of government and giving responsibility, under the Prime Minister, for co-ordination to the Emergency Measures Organization. By Order in Council PC 1963-993 the powers, duties and functions of the Prime Minister relating to civil defence and control of the Emergency Measures Organization were transferred to the Minister of Defence Production. In June 1965, previous Orders were revoked and replaced by the Civil Emergency Measures Planning Order PC 1965-1041, which schedules civil emergency powers, duties and functions to 12 federal departments and four agencies. The Planning Order directs that the Minister of Industry, through the Emergency Measures Organization, shall develop policies and a program to ensure continuity of government in an emergency; co-ordinate civil emergency planning and training by departments and agencies of the Government of Canada; plan, in conjunction with provincial authorities, for the control of civil road transport in an emergency; plan civil emergency measures in respect to matters which are not the responsibility of any department, agency or Crown corporation of the Government; provide assistance and guidance to provincial and municipal governments in civil emergency planning matters; provide general liaison with other countries and with NATO on matters relating to civil emergency planning; and be responsible for the direction and administration of the Canadian Civil Defence College. In June 1965, the name of the Organization was changed to Canada Emergency Measures Organization and the name of the college to Canadian Emergency Measures College.

**Canadian Government Printing Bureau.**—The printing functions formerly provided by the Department of Public Printing and Stationery were transferred by Order in Council (PC 1963-1254) dated Aug. 21, 1963, to the Department of Defence Production. The latter Department, on Apr. 1, 1964, authorized the organization of the Canadian Government Printing Bureau as a distinct function under that Department, to be separated from the former Publications Branch and the Purchasing Stationery and Stores Branch of the Department of Public Printing and Stationery.

The Canadian Government Printing Bureau, under the direction of a General Manager, provides a variety of printing services, such as House of Commons Debates, Votes and Proceedings, Orders of the Day and other parliamentary papers for both Houses of Parliament, and other printing requirements of government departments and agencies. The main plant is located in Hull, Que.; smaller field units are located in the Ottawa area and in other major centres to handle the duplicating requirements of individual government departments.

**Canadian Penitentiary Service.**—The Penitentiary Service operates under the Penitentiary Act (SC 1960-61, c. 53) and is under the jurisdiction of the Solicitor General of Canada. It is responsible for all federal penitentiary institutions and for the care and training of persons sentenced or committed thereto. The Commissioner of Penitentiaries, under the direction of the Solicitor General, has control and management of the Service and all matters connected therewith.

**Canadian Pension Commission.**—This Commission, established in 1933 by amendments to the Pension Act (RSC 1952, c. 207), replaced the Board of Pension Commissioners, the first organization created to deal solely with war pensions for service in Canada's Armed Forces. The Commission's main function is the administration of the Pension Act under which it adjudicates upon all claims for pension in respect of disability or death arising out of service in Canada's Armed Forces; and Parts I to X inclusive of the Civilian War Pensions and Allowances Act, which provide for the payment of pensions in respect of death or disability arising out of civilian service directly related to the prosecution of World War II. It also adjudicates on claims for pension under various other measures; authorizes and pays monetary grants accompanying certain gallantry awards bestowed on members of the Armed Forces; and administers various trust funds established by private individuals for the benefit of veterans and their dependants. The Commission consists of eight to twelve Commissioners and up to five *ad hoc* Commissioners appointed by the Governor in Council. Its chairman has the rank of a Deputy Head of a department and the Commission reports to Parliament through the Minister of Veterans Affairs.

**Department of Defence Production.**—The Department of Defence Production was established in April 1951 by the Defence Production Act (SC 1951, c. 4—now the Defence Production Act, RSC 1952, c. 62, as amended by SC 1955, c. 52). It has exclusive authority for the procurement of goods and services required by the Department of National Defence and, in addition, has the responsibility for ensuring that necessary production capacity and materials are available in Canada to support the defence production program. Measures for which the Department is responsible include defence equipment export activities, the establishment of arrangements with the United States and other friendly countries for co-operative efforts in defence industrial research, development and production, and the management of Canadian participation in the co-operative endeavours of the NATO Armaments Committee.

On Sept. 4, 1963, the Government gave to the Department the responsibility for implementing certain recommendations of the Royal Commission on Government Organization relating to the formation of a central purchasing and supply agency. In essence this required that the existing structure of the Department be gradually reshaped in order to accept the function of procurement on behalf of all civilian departments and agencies other than commercially oriented Crown corpora-



tions, and the civilian supply function. To meet this responsibility there have been established within the Department a Canadian Government Purchasing Service, a Canadian Government Supply Service and a Canadian Government Repair Service which are being developed to form a future Department of Supply.

The Canadian Government Purchasing Service consists of five operational branches: Aircraft, Electrical and Electronics, Machinery, Shipbuilding and Heavy Equipment and General Purchasing. The Canadian Government Supply Service consists of six headquarters branches, a Regional Supply Centre operated as a pilot operation in Ottawa, a system of regional purchasing offices in Canada, the United States and Europe, and the Crown Assets Disposal Corporation. The six headquarters branches are: Regional Purchasing, Warehousing and Distribution, Specifications and Standards, Traffic Management, Cataloguing and Quality Management. The Canadian Government Repair Service provides maintenance, repair and overhaul services and technical advice to Federal Government departments and agencies for all non-military machines, equipment and other products located in Canada.

The service and advisory functions of the Department are performed by the Contracts Approval Board, the Contract Policy Group, the Legal Adviser and the following branches: Comptroller, Contracts, General Services, Management Control, Management Services and Personnel.

The Emergency Supply Planning Branch is responsible for planning a War Supply Agency which, in the event of a nuclear war, would exercise control over the production, distribution and pricing of civil and military supplies.

The following Crown companies and agencies report to Parliament through the Minister of Defence Production: Canadian Arsenals Limited, Crown Assets Disposal Corporation, Polymer Corporation Limited, Canadian Commercial Corporation and Canada Emergency Measures Organization. The Canadian Government Printing Bureau is also responsible to the Department of Defence Production.

**Dominion Bureau of Statistics.**—The Dominion Bureau of Statistics was set up by statute in 1918 as a central statistical department for Canada (SC 1918, c. 43). In 1948 this statute, which had been consolidated as the Statistics Act (RSC 1927, c. 190), was repealed and replaced by the Statistics Act (RSC 1952, c. 257); it was amended by SC 1952-53, c. 18, assented to Mar. 31, 1953.

The function of the Dominion Bureau of Statistics is to compile, analyse and publish statistical information relative to the commercial, industrial, financial, social and general condition of the people and to conduct regularly a census of population and agriculture of Canada as required under the Act.

The Bureau is a major publication agency of the Federal Government; its reports cover all aspects of the national economy. The administrative head of the Bureau is the Dominion Statistician who has the rank of a Deputy Head of a department and reports to Parliament through the Minister of Trade and Commerce.

**Department of Energy, Mines and Resources.**—Under the terms of the Government Organization Act (SC 1966, c. 25), the Department of Energy, Mines and Resources supersedes the Department of Mines and Technical Surveys and encompasses certain functions formerly conducted by other departments and agencies. The Department, in addition to its administrative services, is organized into four groups: the Research Group includes the Geological Survey of Canada Branch, the Mines Branch, the Surveys and Mapping Branch, the Observatories Branch and the Geographical Branch, all of which are engaged in research and the provision of information in their respective fields; the Mineral Development Group includes the Mineral Economics Branch, which gathers economic data for all minerals for use of government, industry and the public and conducts administrative functions of resource management, and the Explosives Division which controls, under the provisions of the Explosives Act, the production and handling of explosives; the Water Group is concerned with all types of water matters including groundwater and oceanic investigations and surveys, water pollution, water power, water conservation and control, and federal-provincial and international studies and regulations; the Energy Development Group recommends and advises on energy policies in the total context of all energy sources and future energy requirements.

The following Crown corporations report to Parliament through the Minister of Energy, Mines and Resources: the National Energy Board, the Dominion Coal Board, Atomic Energy of Canada Limited, Eldorado Mining and Refining Limited, Eldorado Aviation Limited and the Atomic Energy Control Board.

**Department of External Affairs.**—This Department was established in 1909 by "An Act to create a Department of External Affairs" (RSC 1952, c. 68). Its main function is the protection and advancement of Canadian interests abroad. The Minister responsible for the Department is the Secretary of State for External Affairs. The senior permanent officer (Deputy Minister) of the Department, the Under-Secretary of State for External Affairs, is assisted by a Deputy Under-Secretary and by four Assistant Under-Secretaries and is advised by the officers in charge of the various divisions. The divisional heads are each responsible for a part of the work of the Department and they are assisted by Foreign Service Officers, External Affairs Officers, other administrative officers and an administrative staff. Officers serving abroad are formally designated as High Commissioners, Ambassadors, Ministers, Counsellors, First Secretaries, Second Secretaries, Third

Secretaries and Attachés at diplomatic posts and Consuls General, Consuls and Vice-Consuls at consular posts. There are 85 diplomatic, consular and other missions maintained abroad by the Department. In 39 additional countries, Canada is represented by non-resident Ambassadors or High Commissioners.

The work of the Department at Ottawa is performed by 26 divisions and three units. The divisions may be grouped into three categories—area, functional and administrative. There are six area divisions—African and Middle Eastern, Commonwealth, European, Far Eastern, Latin American and United States; fourteen functional divisions—Communications, Consular, Cultural Affairs, Defence Liaison (1), Defence Liaison (2), Disarmament, Economic, Historical, Information, Legal, Passport, Press and Liaison, Protocol and United Nations; and six administrative divisions—Administrative Services, Finance, Personnel Operations, Personnel Services, Registry, and Supplies and Properties. The three units are the Inspection Service, the Organization and Methods Unit and the Administrative Improvement Unit.

The International Joint Commission reports to the Secretary of State for External Affairs of Canada as well as to the Secretary of State of the United States. The Secretary of State for External Affairs reports to Parliament for the External Aid Office.

**Department of Finance.**—This Department was created by Act of Parliament in 1869 and now operates under the Financial Administration Act (RSC 1952, c. 116). The Department is responsible for the financial administration of Canada including the raising of money required for the various governmental activities by way of taxation or borrowing. The Comptroller of the Treasury, an officer of the Department, is responsible for all government disbursements. The work of the Department is organized into the following divisions: Tax Policy, Federal-Provincial-Municipal Relations, Social Security and Pensions, Economic Analysis, Government Finance and Government Guaranteed Loans, Tariffs, International Economic Relations, Resources and Development, and International Programmes. The Royal Canadian Mint is a branch of the Department as is the Inspector General of Banks. The Tariff Board, the Municipal Development and Loan Board, the Bank of Canada and its subsidiary the Industrial Development Bank, and the Department of Insurance report to Parliament through the Minister of Finance who is also the spokesman in the Cabinet and the House of Commons for the Auditor General of Canada.

**Department of Fisheries.**—The Department of Fisheries was first organized under a Minister of Fisheries in 1930. Prior to that date the federal fisheries services were maintained by the former Department of Marine and Fisheries, established in 1868. The provinces, under various arrangements, have certain administrative responsibilities in the fisheries but the legislative authority for the regulation of coastal and freshwater fisheries is with the federal Department of Fisheries.

The work of the Department includes: resource development and conservation protection of the fisheries through the enforcement of fishing regulations, the operation of fish culture establishments, management and improvement of spawning streams and control of predators; inspection of fish products for quality control and the encouragement of industrial development; promotion of the greatest utilization of fishery products and a proper public understanding of the resource and the industry. The Department administers the Fishermen's Indemnity Plan to assist fishermen in the event of loss or serious damage to their fishing vessels or lobster traps.

Agencies connected with the Department are the Fisheries Prices Support Board and the Fisheries Research Board of Canada. The Department is represented on the following international commissions: Pacific Salmon Fisheries, Pacific Halibut, Northwest Atlantic Fisheries, North Pacific Fisheries, Whaling, Great Lakes Fishery, and North Pacific Fur Seal.

**Fisheries Research Board.**—The Fisheries Research Board of Canada operates under the Fisheries Research Board Act of 1937 (amended in 1947 and 1952-53). It has been active as a fisheries research body since 1898, first as the Board of Management of the Canadian Marine Biological Station and later (1912) as the Biological Board of Canada. The Board operates under the Minister of Fisheries and membership consists of a full-time chairman and not more than 18 other members. The majority of Board members are university scientists, and other members are representative of the fishing industry and the Department of Fisheries.

The Board, with headquarters in Ottawa, operates research establishments in St. John's, Nfld., Halifax and Dartmouth, N.S., St. Andrews, N.B., Ellerslie, P.E.I., Grande-Rivière and Ste. Anne de Bellevue, Que., Winnipeg, Man., Vancouver and Nanaimo, B.C. Board scientists carry out research on distribution of fish stocks, biology and life history of fishes, marine mammals and other aquatic creatures and plants, oceanography, fishing techniques, quality and nutritive value of fisheries products, with the principal objective of increasing the scope and value of Canadian fisheries.

**Department of Forestry and Rural Development.**—This Department was established in October 1960 to bring under one Ministry the conduct of programs of research relating to forest management, silviculture, protection against fire, insects and disease, and the improvement in the standards of wood utilization and development of forest products. By Order in Council of Mar. 5, 1964, the responsibilities of the Minister of Forestry were expanded to include the functions formerly exercised by the Minister of Agriculture respecting certain rural development programs under the Agricultural Rehabilitation and Development Act (ARDA), the Maritime Marshland Rehabili-



tation Act, and the administration of the program of freight assistance and grain storage costs on western feed grains. The name of the ARDA was changed in 1966 (SC 1966, c. 11) to Agricultural and Rural Development Act (ARDA) and the name of the Department was changed under the terms of the Government Organization Act, 1966 (SC 1966, c. 25) to Department of Forestry and Rural Development.

The Forestry Branch of the Department, in addition to the above functions, carries out economic studies of the forest resources and of the forest industries. Financial assistance is offered to the provinces toward meeting specific forestry needs. The Department conducts forest surveys and provides technical assistance to other agencies of the Federal Government responsible for administration of forest lands, and co-operates with international organizations concerned with forestry in which Canada maintains membership. The Department acts as co-ordinator for the seven-agency Technical Committee for Watershed Research of the Eastern Rockies Forest Conservation Board.

The ARDA program of the Department is joined with existing programs of resource management and economic development to provide public assistance in meeting problems of physical, economic and social adjustment in rural areas. It also includes a program of soil and water conservation aimed at increasing the productivity of basic rural resources. Through a central and developing information program, the Department seeks to promote public understanding of the value of the forest resources and, in co-operation with the provinces, of the work and purpose of the ARDA program.

The Department administers the Fund for Rural Economic Development Act, 1966 (SC 1966, c. 41), which provides for the establishment of a fund not exceeding \$50,000,000 for the economic and social development of special rural development areas. Under this Act the Minister of Forestry and Rural Development may, on the recommendation of the Advisory Board and with the approval of the Governor in Council, enter into an agreement with any province for the joint undertaking of a rural development program in a special rural development area, or may contribute to the cost of such a program undertaken by the province. The Advisory Board consists of not more than ten officials of departments or agencies of the Government of Canada, appointed by the Governor in Council.

The Minister of Forestry and Rural Development reports to Parliament for the Eastern Rockies Forest Conservation Board.

**Department of Indian Affairs and Northern Development.**—The Department of Indian Affairs and Northern Development was established in June 1966 under the terms of the Government Organization Act (SC 1966, c. 25), superseding the Department of Northern Affairs and National Resources. In addition to the Financial and Management Services, the Department is divided into four Branches: the Natural and Historic Resources Branch, which administers the National Parks, the National Historic Parks and the National Historic Sites coming within the jurisdiction of the Federal Government; the Northern Administration Branch, which is responsible for the administration of various federal Acts, territorial ordinances and regulations pertaining to the Government of the Northwest Territories, for the conduct of certain business arising from the general administration of the Yukon Territory, for the administration of natural resources in those Territories, and for Eskimo affairs; the Indian Affairs Branch, which has the responsibility of assisting the Indians through programs in the field of education, economic development, social welfare and community development so that they may share the rights and responsibilities of citizenship and participate on the basis of equality and opportunity through the full spectrum of Canadian life; and the Canadian Wildlife Service, which conducts research on the fauna of Canada and maintains liaison with other international, national, provincial and private agencies and organizations that deal with wildlife.

The Commissioner of the Northwest Territories and the Commissioner of Yukon Territory report to Parliament through the Minister of Indian Affairs and Northern Development. The Minister is also responsible to Parliament for the Northern Canada Power Commission, the National Battlefields Commission, the Historic Sites and Monuments Board of Canada which is an honorary body of recognized historians representing the various provinces, and the Northern Transportation Company Limited. The Advisory Committee on Northern Development acts in an advisory capacity to the Minister. The Deputy Minister is Chairman of the Northern Canada Power Commission.

**Department of Industry.**—Under the Department of Industry Act (SC 1963, c. 3), the Minister of Industry is responsible for promoting the establishment, growth, efficiency and improvement of manufacturing industries in Canada through the development and implementation of programs to assist manufacturers to adjust to changing market conditions, to help them develop new lines of production and enter new markets, and to promote greater industrial research and development as well as good design within Canadian industry.

The Department of Industry is also responsible for undertaking research and investigations on an area or regional basis and preparing programs of development for designated areas of high unemployment and slow economic growth. As a part of these programs, various Federal Government incentive measures are administered.

The Department is organized into ten industry branches: Aircraft, Chemicals, Apparel and Textiles, Electrical and Electronics, Food Products, Machinery, Materials, Mechanical Transport, Shipbuilding and Heavy Equipment, and Wood Products (see also Department of Defence Pro-



duction, p. 131). The Area Development Agency carries out the work associated with regional programs and the National Design Branch, in co-operation with the National Design Council, undertakes programs to promote and encourage good design in Canadian products.

The Program Advisory Group consists of a small number of officers experienced in economics, commercial policy, industrial research and development. Their function is to advise the Department in these areas and to co-ordinate departmental programs related to them.

**Department of Insurance.**—The Minister of Finance is responsible for the Department of Insurance which originated in 1875 as a branch of the Department of Finance but was constituted a separate Department in 1910. It is authorized and governed by the Department of Insurance Act (RSC 1952, c. 70). Under the Superintendent of Insurance, who is the Deputy Head, the Department administers the statutes of Canada applicable to: insurance, loan and trust companies incorporated by the Parliament of Canada; provincially incorporated insurance companies registered with the Department; British and foreign insurance companies operating in Canada; small loans companies and money-lenders; co-operative credit societies registered under the Co-operative Credit Associations Act; and public service insurance.

Under the relevant provincial statutes, the Department examines trust companies incorporated in the Provinces of Manitoba and New Brunswick and loan and trust companies incorporated in the Province of Nova Scotia.

**International Joint Commission.**—This Commission was established under a Britain-United States treaty signed Jan. 11, 1909 and ratified by Canada in 1911. The Commission, composed of six members (three appointed by the President of the United States and three by the Government of Canada), is governed by five specific Articles of the Boundary Waters Treaty of 1909. The Commission's approval is required for any use, obstruction or diversion of boundary waters affecting the natural level or flow of boundary waters in the other country; and for any works in waters flowing from boundary waters or below the boundary in rivers flowing across the boundary which raise the natural level of waters on the other side of the boundary.

Problems arising along the common frontier are also referred to the Commission by either country for examination and report, such report to contain appropriate conclusions and recommendations. In addition, questions or matters of difference between the two countries may be referred to the Commission for decision, provided both countries consent.

The Commission reports to the Secretary of State for External Affairs of Canada and to the Secretary of State of the United States.

**Department of Justice.**—This Department, established by SC 1868, c. 39, now operates under authority of the Department of Justice Act (RSC 1952, c. 71 as amended by SC 1960, c. 4 and SC 1966, c. 25). The Minister of Justice is the official legal adviser of the Governor General and the legal member of the Queen's Privy Council for Canada. It is his duty to see that the administration of public affairs is in accordance with law, to superintend all matters connected with the administration of justice in Canada that are not within the jurisdiction of the provincial governments, to advise upon the legislation and proceedings of the provincial legislatures and generally to advise the Crown upon all matters of law referred to him by the Crown. The Minister of Justice is, ex officio, Her Majesty's Attorney General of Canada. In this capacity it is his duty to advise the heads of the departments of the Government of Canada upon all matters of law connected with such departments, to settle and approve all instruments issued under the Great Seal of Canada, and to regulate and conduct all litigation for or against the Crown in the right of Canada.

**Department of Labour.**—The Department of Labour was established in 1900 by Act of Parliament (SC 1900, c. 24) and now operates under authority of the Department of Labour Act (RSC 1952, c. 72). The Department administers, under the Minister of Labour, legislation dealing with: industrial relations, investigation of disputes, etc.; fair employment practices; the regulation of fair wages and hours of labour; female employee equal pay; government annuities; government employee compensation; merchant seamen compensation; and hours of work, minimum wages, annual vacations and holidays with pay. It promotes joint consultation with industry through labour-management committees and operates a Women's Bureau. The Department publishes the *Labour Gazette* and other publications, as well as general information on labour-management, employment, manpower and related subjects.

The Merchant Seamen Compensation Board reports to the Minister of Labour. The Department is the official liaison agency between the Canadian Government and the International Labour Organization. The Unemployment Insurance Commission, the Chairman of the Board of Trustees of the Maritime Transportation Unions, the Central Mortgage and Housing Corporation and the Canada Labour Relations Board report to Parliament through the Minister of Labour. The Canada Labour Relations Board administers certain provisions of the Industrial Relations and Disputes Investigation Act.

**Library of Parliament.**—The Library of Parliament as such was established in 1871 (SC 1871, c. 21) although it existed earlier. It currently functions under RSC 1952, c. 166 and SC 1955, c. 35. The Library of Parliament keeps all books, maps and other articles that are in the joint possession of the Senate and the House of Commons. The Parliamentary Librarian is also re-

sponsible for the House of Commons Reading Room. Persons entitled to borrow books from the Library of Parliament are the Governor General, Members of the Privy Council, Members of the Senate and the House of Commons, Officers of the two Houses, Justices of the Supreme Court of Canada and the Exchequer Court, and members of the Press Gallery. In addition, books are lent to other libraries and government agencies and reference service is given to scholars. A special research branch serves Parliamentarians only. The Parliamentary Librarian has the rank of a Deputy Head of a department and is responsible for the control and management of the Library under the Speaker of the Senate and the Speaker of the House of Commons assisted by a Joint Committee appointed by the two Houses.

**Department of Manpower and Immigration.**—This Department was constituted in June 1966 by the Government Organization Act (SC 1966, c. 25), which was proclaimed effective on Oct. 1, 1966, under the Minister of Manpower and Immigration. The Department is composed of two operational services and four support services. The Canadian immigration service administers the Immigration Act and Regulations and is responsible for the selection, examination and movement of immigrants and for the exclusion or deportation of undesirables. The Department's employment service is responsible for: the manpower mobility program; assisting in the recruitment and placement of workers to meet industry's requirements; community adjustment of immigrants and migrants; occupational and job classifications and descriptions; selection techniques; testing methods; vocational and technical training, rehabilitation of the vocationally handicapped; and municipal winter works incentive programs and winter employment campaigns. The Department also has a service which is responsible for the development and evaluation of departmental programs; research; the operation of pilot projects in training and other areas; legislation and legal services; and emergency manpower planning at the national level. Other support services are Financial and Management; Personnel; and Information.

The Canadian immigration service, until Oct. 1, 1966, was part of the Department of Citizenship and Immigration which has been renamed the Department of Manpower and Immigration; the majority of the other components of the Department were, prior to Oct. 1, 1966, under the jurisdiction of the Department of Labour.

The Immigration Appeal Board, which deals with appeals made against Orders of Deportation, reports to the Minister of Manpower and Immigration. The National Advisory Committee on the Rehabilitation of Disabled Persons, the National Technical and Vocational Training Advisory Council and the National Employment Committee act in an advisory capacity to the Minister.

**Department of National Defence.**—The Department of National Defence and the Canadian Forces operate under the National Defence Act (RSC 1952, c. 184). The Canadian Forces are administered by the Minister of National Defence and the Associate Minister of National Defence. Since August 1964, when a single Chief of the Defence Staff was appointed, the reorganization of the Canadian Forces Headquarters, the command structure and the consolidation of the Canadian Forces Bases has been proceeding. In June 1965, a plan was announced to reduce the previous major commands in Canada to six: Maritime, Mobile, Air Transport, Air Defence, Training and Materiel. This accomplished, the stage has been reached for final steps toward a single unified force.

The Defence Research Board, created in 1947 to carry out research relating to national defence and to advise the Minister on all relevant matters of a scientific or technical nature, functions under the National Defence Act. The Crown corporation, Defence Construction (1951) Limited, reports to Parliament through the Associate Minister of National Defence.

**National Energy Board.**—This Board was established under the National Energy Board Act, 1959 for the broad purpose of assuring the best use of energy resources in Canada. The Board, composed of five members, is responsible for the regulation of the construction and operation of the oil and gas pipelines that are under the jurisdiction of the Parliament of Canada, the tolls charged for transmission by oil and gas pipelines, the export and import of gas and the export of electric power, and the construction of the lines over which such power is transmitted. The Board is also required to study and keep under review all matters relating to energy under the jurisdiction of the Parliament of Canada and to recommend such measures as it considers necessary and advisable on the subject. The Board reports to Parliament through the Minister of Energy, Mines and Resources.

**National Film Board.**—The National Film Board, established in 1939, operates under the National Film Act (RSC 1952, c. 185) which provides for a Board of Governors of nine members—a Government Film Commissioner, appointed by the Governor in Council, who is chairman of the Board, three members from the public service of Canada and five members from outside the public service. The Board reports to Parliament through the Secretary of State. The Board is responsible for advising the Governor in Council on film activities and is authorized to produce and distribute films in the national interest and, in particular, films "designed to interpret Canada to Canadians and to other nations".

**Department of National Health and Welfare.**—This Department was established in October 1944 under authority of the Department of National Health and Welfare Act (RSC 1952, c. 74).



It was originally formed as the Department of Health in 1919 and later became part of the Department of Pensions and National Health. That Department was replaced in 1944 by the Department of National Health and Welfare and the Department of Veterans Affairs.

The Department, headed by the Minister of National Health and Welfare, is composed of three branches—Administration, Health and Welfare—and is administered by two Deputy Ministers.

The Department has charge of all matters relating to the promotion or preservation of the health, social security and social welfare of the people of Canada over which the Federal Parliament has jurisdiction. It administers the Acts listed in Sect. 4, p. 153, and is also responsible for: the administration of the National Health Program under which grants are made available to the provinces for the development and extension of health services; the federal aspects of emergency health and welfare services; health and safety in the peaceful uses of atomic energy and other sources of radiation affecting the population; the provision of health, medical and hospital services to Indians and Eskimos and to other elements of the population in the Yukon and Northwest Territories; the provision of assistance and consultative services to the provinces upon request on blindness control, child and maternal health, environmental health, mental health, dental health, nursing, medical rehabilitation, bacteriology, virology, parasitology and clinical chemistry, zoonoses, nutrition and health facilities design; the inspection and medical care of immigrants and seamen and the administration of marine hospitals; the supervision of public health facilities on railway, water and other forms of transportation; the enforcement of regulations of the International Joint Commission relating to public health; the promotion and conservation of the health of government employees; the collection, publication and distribution, subject to the provisions of the Statistics Act, of information relating to public health, improved sanitation and social and industrial conditions affecting the health of Canadians. It co-ordinates and assists international welfare activities in which Canada is engaged and administers a system of grants to the provinces for professional welfare training, welfare research and general welfare services.

**National Library.**—The National Library came formally into existence on Jan. 1, 1953, with the proclamation of the National Library Act (RSC 1952, c. 330). It publishes *Canadiana*, a monthly catalogue of new publications relating to Canada, with an annual cumulation. The Library also publishes other bibliographies. Its Reference Division maintains the *National Union Catalogue*, which embodies the author catalogues of the major libraries in the ten provinces and is thus a key to the book collections of the whole country. Its book collection is growing steadily and at the end of 1965 consisted of over 300,000 volumes. The National Librarian reports to Parliament through the Secretary of State.

**National Parole Board.**—The establishment of the National Parole Board, which was formed in January 1959, is authorized by the Parole Act (SC 1958, c. 38) by which it is given absolute jurisdiction over all matters of parole. It is composed of a chairman and four members appointed by Order in Council for a ten-year period. The Board reports to Parliament through the Solicitor General of Canada.

**Department of National Revenue.**—From Confederation until May 1918, customs and inland revenue Acts were administered by separate departments; after that date they were amalgamated under one Minister as the Department of Customs and Inland Revenue. In 1921 the name was changed to the Department of Customs and Excise. In April 1924 collection of income taxes was placed under the Minister of Customs and Excise and, under the Department of National Revenue Act, 1927, the Department became known as the Department of National Revenue.

The Customs and Excise Division of the Department is responsible for the assessment and collection of customs and excise duties as well as of sales and excise taxes. The Taxation Division is responsible for the assessment and collection of income taxes, gift tax, old age security tax, Part I of the Canada Pension Plan, and estate taxes for Canada and all provinces, except Quebec, through its 29 district taxation offices and its Taxation Data Centre.

The Minister of National Revenue is responsible to Parliament for the Tax Appeal Board.

**Office of the Chief Electoral Officer.**—This Office was established in 1920 under the provisions of the Dominion Elections Act, now the Canada Elections Act (RSC 1960, c. 39, and amendments thereto), and is responsible for the conduct of all federal elections as well as the elections of members of the Northwest Territories Council and of the Yukon Territory Council. In addition, it conducts any vote taken under the Canada Temperance Act. The Chief Electoral Officer is responsible directly to Parliament, the Secretary of State acting as spokesman for him in the Cabinet and the House of Commons.

**Office of the Comptroller of the Treasury.**—The Comptroller of the Treasury is an officer of the Department of Finance appointed by the Governor in Council. Under the authority of the Financial Administration Act, he has the statutory responsibility of ensuring that no payment out of the Consolidated Revenue Fund is made for a purpose not authorized by or in excess of an amount appropriated by Parliament and that all relevant executive regulations are observed. For this



purpose, he conducts a pre-audit of all payments except those under the Travel Regulations. He also provides a cheque-issue and accounting service for all departments and is responsible for the preparation of the *Public Accounts* and other financial statements of the government.

**Office of the Representation Commissioner.**—This Office was established in 1963 under the provisions of the Representation Commissioner Act (SC 1963, c. 40) and is responsible for preparing maps showing the distribution of population in each province and setting out alternative proposals respecting the boundaries of electoral districts in each province. In addition, it is required to make a review and study methods of registration of electors and absentee voting used in elections of other countries. The Secretary of State acts as spokesman for the Office in the Cabinet and the House of Commons.

**Post Office Department.**—Administration and operation of the Canada Post Office, by virtue of the Post Office Act (RSC 1952, c. 212) and under the Postmaster General, includes all phases of postal activity, personnel, mail handling, transportation of mails by land, water, rail and air and the direction and control of financial services including the operation of money order and savings bank business.

**Privy Council Office.**—For administrative purposes, the Privy Council Office is regarded as a Department of Government under the Prime Minister. The Clerk of the Privy Council, under whose direction its functions are carried out, is considered as a Deputy Head and takes precedence among the chief officers of the Public Service. The authority of the Privy Council Office is to be found in Sects. 11 and 130 of the British North America Act, 1867, which constituted a Council to aid and advise in the government of Canada to be styled the Queen's Privy Council for Canada. In 1940, upon the wartime development of Cabinet committees and the consequent need for orderly secretarial procedures such as agenda, explanatory memoranda and minutes, the Principal Secretary in the Prime Minister's Office was designated Clerk of the Privy Council and First Secretary to the Cabinet. Since 1946, the Privy Council Office has been further reorganized, developed and enlarged and certain administrative functions of the Privy Council Office and the Prime Minister's Office have been closely integrated in the interests of efficiency and economy.

The organization of the Privy Council Office at present consists primarily of the Privy Council Section concerned with the examination of submissions to the Governor in Council, preparation of draft orders and regulations, circulation and filing of approved orders, and the duties of editing, registering and publishing the federal statutory regulations in Part II of the *Canada Gazette*; the Cabinet Section dealing with secretarial work for the Cabinet and for Cabinet committees and interdepartmental committees, such as the preparation and circulation of agenda and necessary documents to Ministers and recording and circulating decisions, liaison with departments and agencies of government, and the preparation of material for the Prime Minister; the Science Secretariat established in 1964 to assemble and analyse information about the Government's scientific programs and their inter-relation with other scientific activities throughout Canada; the Special Planning Secretariat established in 1965 to assess the extent and nature of the problems of poverty and inadequate opportunities in Canada, to analyse existing federal measures and to develop proposals for future federal programs aimed at overcoming inadequate economic and social opportunities; and the Special Secretariat on Bilingualism established in 1966.

The Office of the Prime Minister is organized as a Secretariat associated with the Privy Council Office and includes members of the Prime Minister's personal staff responsible for general secretarial duties, the drafting of letters, the arrangement of appointments to interview the Prime Minister or for his public appearances or for the release of his statements on matters of public interest, and assisting the Prime Minister in his parliamentary duties.

**Public Archives.**—The Public Archives was founded in 1872 and is administered under the Public Archives Act (RSC 1952, c. 222) by the Dominion Archivist who has the rank of a Deputy Minister and reports to Parliament through the Secretary of State. Its purpose is to assemble and make available to the public a comprehensive collection of historical source material relating to the history of Canada. Major emphasis is placed on official records of the Government and the personal papers of political leaders and other prominent figures. These are supplemented by copies of many records in the British and French archives that relate to Canada, a fine map collection, a historical library, and many prints, paintings and photographs. The Archives operates a large Records Centre which provides accommodation for departmental records that are seldom used and also serves as a sorting centre, preserving papers of long-term interest from obsolete files and marking useless material for destruction. The Government's Central Microfilm Unit is housed in the Records Centre.

Under the terms of the Laurier House Act (RSC 1952, c. 163) the Public Archives is responsible for the administration of Laurier House as a museum and study centre.

**Public Service Commission.**—At the time of writing (November 1966) a Bill is before Parliament which will, if passed,\* replace the Civil Service Act of 1961; it is under this Act that the Civil Service Commission, the central personnel agency of the Federal Government, operates.

\* See Chap. XXVII. Part IV.

The Commission is the custodian of the merit system of employment and promotion in the Civil Service and is concerned with most other aspects of personnel administration. However, the proposed Public Service Employment Act will change many functions of the (Public Service) Commission (see the 1966 Year Book, pp. 143-145). It reaffirms the merit principle and makes possible the extension of its application to certain groups of employees now exempt from the provisions of the Civil Service Act; although permitting the delegation of authority to deputy heads and their officers for making appointments to and within the Public Service, the Commission will maintain centralized staffing operations for groups whose occupations are common to all departments and for certain specialized classes; the Commission will still be responsible for all appointments and report annually to Parliament, through the Secretary of State, on the discharge of this responsibility. The Commission will be relieved of the responsibility of recommending rates of pay and certain conditions of employment and also of all matters that would be directly or indirectly the subject of bargaining.

**Department of Public Works.**—The Department was constituted in 1867 and operates under the legislative authority of the Public Works Act and other Acts of Parliament. It is responsible for the management and direction of the public works of Canada and, except as specifically provided in other Acts, attends to the construction and maintenance of public buildings, wharves, piers, roads and bridges and the undertaking of dredging and navigable waters protection work. Federal Government interest in the Trans-Canada Highway and the Northwest Highway System is also handled by the Department. The Department maintains district offices at key points across the country. The Branches and Divisions of the Department are: Harbours and Rivers Engineering, Building Construction, Development Engineering, Property and Building Management, Administrative Services, Economic Studies, Financial Services, Fire Prevention, Information Services, Legal Services and Personnel.

The Minister of Public Works is also responsible to Parliament for the National Capital Commission. -

**Department of the Registrar General.**—This Department was established by the Government Organization Act, 1966 (SC 1966, c. 25) which was proclaimed effective Oct. 1, 1966. It is presided over by the Registrar General of Canada whose duties include all matters over which the Parliament of Canada has jurisdiction relating to combines, mergers, monopolies and restraint of trade; patents, copyrights and trade marks; bankruptcy and insolvency; and corporate affairs. His functions also include the registration of all instruments issued under the Great Seal of Canada.

**Royal Canadian Mounted Police.**—The Royal Canadian Mounted Police, a civil force maintained by the Federal Government, was organized in 1873 as the North-West Mounted Police. It now operates under the Royal Canadian Mounted Police Act, 1959 and is responsible for enforcing federal laws throughout Canada. By agreement with certain provincial governments, it is also responsible for enforcing provincial laws within those provinces and for policing many district municipalities, cities and towns. A Commissioner, appointed by the Governor in Council, has the control and management of the Force and of all matters connected therewith; he functions under the direction of the Solicitor General of Canada.

**Department of the Secretary of State.**—The duties, powers and functions of the Secretary of State of Canada extend to and include all matters over which the Parliament of Canada has jurisdiction, not by law assigned to any other department, branch or agency of the Government of Canada, relating to: citizenship; elections; State ceremonial, the conduct of State correspondence and the custody of State records and documents; the encouragement of the literary, visual and performing arts, learning and cultural activities; and libraries, archives, historical resources, museums, galleries, theatres, films and broadcasting.

The responsibilities of the Department of the Secretary of State include those pertaining to the administration of the following branches: Citizenship; Citizenship Registration; financial support for higher education; National Museum of Canada; Secretariat and Parliamentary Returns; and Translation Bureau.

The Secretary of State of Canada reports to Parliament for the Centennial Commission, the National Arts Centre Corporation, the National Film Board, the National Library, the Public Archives, the National Gallery and the Office of the Queen's Printer (Publisher), and is spokesman in the Cabinet and the House of Commons for the Board of Broadcast Governors, the Canada Council, the Canadian Broadcasting Corporation, the Public Service Commission, the Office of the Chief Electoral Officer and the Office of the Representation Commissioner.

**Department of the Solicitor General.**—Before 1936, the Office of the Solicitor General was either a Cabinet post or a Ministerial post outside the Cabinet. From 1936 to 1945 the position did not exist, the duties of the Office being wholly absorbed by the Attorney General of Canada. The Solicitor General Act, 1945 (RSC 1952, c. 253) re-established the Solicitor General as a Cabinet officer and provided that "... The Solicitor General shall assist the Minister of Justice in the Counsel work of the Department of Justice, and shall be charged with such other duties as are at any time assigned to him by the Governor-in-Council". This legislation was repealed by the Government Organization Act, 1966 (SC 1966, c. 25), which created a new Department of the Solicitor General



and assigned to the Solicitor General of Canada responsibility for the Royal Canadian Mounted Police, the Canadian Penitentiary Service and the National Parole Board. With this new legislation, the Solicitor General of Canada becomes the Cabinet Minister with primary responsibility in the fields of crime and correction.

**Tariff Board.**—Constituted in 1931, the Board derives its duties and powers from three statutes: the Tariff Board Act (RSC 1952, c. 261, as amended); the Customs Act (RSC 1952, c. 58, as amended); and the Excise Tax Act (RSC 1952, c. 100, as amended).

Under the Tariff Board Act, the Board makes inquiry into and reports upon any matter in relation to goods that, if brought into Canada, are subject to or exempt from duties of customs or excise taxes. Reports of the Board are tabled in Parliament by the Minister of Finance. It is also the duty of the Board to hold an inquiry under Sect. 14 of the Customs Tariff and to inquire into any other matter in relation to the trade and commerce of Canada that the Governor in Council sees fit to refer to the Board for inquiry and report.

Under the provisions of the Customs Act and the Excise Tax Act, the Tariff Board acts as a court to hear appeals from rulings of the Department of National Revenue, Customs and Excise Division, in respect of excise taxes, tariff classification, value for duty, and drawback of customs duties. Declarations of the Board on appeals on questions of fact are final and conclusive but the Acts contain provisions for appeal on questions of law to the Exchequer Court of Canada.

**Tax Appeal Board.**—The Tax Appeal Board (created in 1946 as the Income Tax Appeal Board) now operates under the Income Tax Act (RSC 1952, c. 148 as amended). The Board is declared by statute to be a court of record and has jurisdiction to hear and determine appeals by taxpayers against their assessment under the Income Tax Act and also appeals under the Estate Tax Act. An appeal lies from the Board to the Exchequer Court of Canada and a further appeal from that court to the Supreme Court of Canada. The Board consists of a chairman, an assistant chairman and four other members. Its offices are located at Ottawa and it hears appeals at the principal centres throughout Canada approximately twice a year and at the main centres, such as Montreal and Toronto, six times a year. The Board is under the jurisdiction of the Minister of National Revenue but is independent of the Department of National Revenue.

**Department of Trade and Commerce.**—The Department of Trade and Commerce has consistently expanded its services to the business community since becoming functional in 1892, almost five years after establishment was approved by an Act of Parliament. Today the Department has 202 Trade Commissioners on its staff serving at headquarters in Ottawa and at 66 posts in 46 countries abroad; this figure includes Assistant Trade Commissioners in training as well as agricultural, fisheries, publicity and timber specialists. Trade Commissioners carry such titles as Minister (Commercial), Commercial Counsellor or Commercial Secretary and hold diplomatic status if they are members of a mission maintained by the Department of External Affairs.

The Department comprises three principal services: Trade Policy governs trade relations; External Trade Promotion is responsible for the Canadian Government Travel Bureau, the Canadian Government Exhibition Commission, the Trade Commissioner Service, and the Trade Publicity and Trade Fairs and Missions Branches; the Commodities and Industries Services incorporates the Agriculture and Fisheries Branch, Industrial Materials Branch, Manufacturing Industries and Engineering Branch, and the Transportation and Trade Services Branch.

Crown corporations and agencies that report to Parliament through the Minister of Trade and Commerce include the Dominion Bureau of Statistics, the Export Credits Insurance Corporation, the Canadian Corporation for the 1967 World Exhibition, the Canadian Government Participation, 1967 Exhibition and the Canadian Wheat Board.

**Department of Transport.**—The Department was created on Nov. 2, 1936 from the former Departments of Marine and of Railways and Canals, and the Civil Aviation Branch of the Department of National Defence (RSC 1952, c. 79).

The work of the Department consists of two main Services—Marine and Air. Marine Service operations include aids to navigation, nautical and pilotage services, marine agencies, secondary canals, steamship inspection, the Canadian Coast Guard, and direct supervision over 300 public harbours; 11 other harbours come under supervision of the Department but are administered by commissions. Air Services cover the operation of the Telecommunications and Electronics, Civil Aviation, and Meteorological Branches. The work of the Telecommunications and Electronics Branch includes the administration of national and international radio laws, regulations and agreements; it is also responsible for the construction, installation, maintenance and operation of aeronautical, marine and meteorological radio-communication stations and of radio and electronics aids to marine and air navigation.

The Minister of Transport is responsible to Parliament for the following boards, commissions and Crown companies: Air Canada, the Air Transport Board, the Board of Transport Commissioners, the Canadian Maritime Commission, the National Harbours Board, the St. Lawrence Seaway Authority, the Canadian Overseas Telecommunication Corporation, the Canadian National Railways and the Atlantic Development Board.



**Treasury Board.**—The Treasury Board was first established as a committee of the Queen's Privy Council for Canada by PC 3 of July 2, 1867; it was subsequently made statutory in 1869. With the Minister of Finance as Chairman, and the administrative staff (including the Secretary of the Board) provided by the Department of Finance, the Board has, from its inception, exercised oversight, on behalf of the Governor in Council, over the financial affairs of the various departments and agencies of the Government.

By the Government Organization Act, 1966 (SC 1966, c. 25), these historic, organic links between the Minister and the Department of Finance and the Treasury Board were altered in a number of important respects. The Board was established as a separate department of government under its own Minister, the President of the Treasury Board. The membership of the Board was enlarged from six to seven, with the Minister of Finance serving ex officio as a member, together with five additional Privy Councillors designated by the Governor in Council. The President of the Board, in addition to assuming the duties formerly vested in the Minister of Finance as Chairman of the Board, became the Minister responsible for the new Department and, in this capacity, was given, for the first time, power to act on behalf of the Board in intervals between Board meetings. This marked an important step in the evolution of the Board from a committee of Ministers to a department of government, with certain managerial and administrative responsibilities in its own right.

The powers and duties of the Board continue to be governed by the Financial Administration Act (RSC 1952, c. 116) which was also amended in a number of important respects in 1966. The effect of these amendments was to establish the Treasury Board, even more clearly than before, as the agency of government chiefly responsible for formulating central management policy, issuing directives and guidelines, and monitoring departmental performance in a wide variety of fields. These include most financial management functions, e.g., short- and long-range expenditure forecasting, program analysis, estimates preparation, supervision and control of expenditures, leases, contracts, financial commitments, etc. Responsibility for providing leadership and stimulus to improved management performance and to the application of modern, efficient administrative methods within departments and agencies was also vested, for the first time, explicitly in the Board.

Possibly the most important change in the duties and responsibilities of the Board was in the field of personnel management. This resulted in part from the recommendations of the Royal Commission on Government Organization and in part from the designation of the Board as the principal agent of the employer in collective bargaining—a role assigned to it by the provisions of the Public Service Staff Relations Act of 1966. The Board had assigned to it, in addition to its previous duties relating to organization and establishment control, exclusive responsibility for classification, rates of pay and conditions of employment, a responsibility previously shared with the Civil Service Commission (now Public Service Commission) and for determining generally the policy governing personnel management in the public service. The legislation assigning these new responsibilities to the Board contemplates and provides for extensive delegation of the Board's authority to the operating departments, under terms and conditions established by the Board.

The Treasury Board, in the new role assigned to it in the fields of financial management, personnel management and administrative improvement, conforms closely in most respects to the concept of the Treasury Board as the central management agency for the Government of Canada, outlined in 1962 in the first Report of the Royal Commission on Government Organization (Glassco Commission).

**Department of Veterans Affairs.**—This Department, established in 1944 (RSC 1952, c. 80), is concerned exclusively with the welfare of veterans and with the dependants of veterans and of those who died on active service. The Department provides treatment services (hospital, medical, dental and prosthetic), welfare services, education assistance, life insurance, and land settlement and home construction assistance. The Veterans' Bureau assists veterans in the preparation and presentation of pension claims.

The Canadian Pension Commission established by the Pension Act (RSC 1952, c. 207), and the War Veterans Allowance Board established by the War Veterans Allowance Act (RSC 1952, c. 340) also report to Parliament through the Minister of Veterans Affairs.

The Department has treatment institutions and facilities in a number of urban centres. It also maintains, in large cities across Canada, administrative offices, which are shared with the Canadian Pension Commission and the War Veterans Allowance Board, and an office in London, England.

**War Veterans Allowance Board.**—This Board, established under the authority of the War Veterans Allowance Act, 1930 (RSC 1952, c. 340 as amended), is a statutory body responsible to the Minister of Veterans Affairs for the administration of the Act and for the administration of Part XI of the Civilian War Pensions and Allowances Act relating to certain groups of civilians who performed meritorious service in either World War I or II. It consists of three to ten members (three to five permanent, up to three temporary, and up to two additional without pay) appointed by the Governor in Council. Its functions include the responsibility of ensuring that all 19 District Authorities located in various regions throughout Canada interpret the legislation in a fair, reasonable and equitable manner. It is also an appeal body and may consider an appeal of an appellant against the decision of a District Authority.

### Section 3.—Crown Corporations

The Crown corporation form of public enterprise is not a new type of organization in Canada but in recent years, as the work of government has become more complex, greater reliance has been placed on it as the appropriate instrument for administering and managing many public services in which business enterprise and public accountability must be combined.

The use of the corporate device to harmonize public responsibility in the development of economic resources and the provision of public services with the pursuit of commercial and industrial objectives has led to the adoption of many different forms and formulas of management. The most usual practice has been to set up a corporation under the provisions of a special Act of Parliament which defines its purposes and sets forth its powers and responsibilities. However, during World War II the Minister of Munitions and Supply was authorized to procure the incorporation of companies under the federal Companies Act, 1934, or under any provincial Companies Act to which he might delegate any of the powers conferred on him under the Department of Munitions and Supply Act or any Order in Council. Under this legislation about 28 companies were created to serve a wide variety of purposes; most of these companies have since been wound up.

Following the successful experience during the war years in relying on the Companies Act for the establishment of Crown companies, similar incorporating powers were granted by an amendment to the Research Council Act and have been incorporated in the Atomic Energy Control and the Defence Production Acts.

In 1946 the Government Companies Operation Act was passed to regulate the operation of companies formed under the Companies Act. However, it was applicable only to a relatively small number of companies and, in order to establish a more uniform system of financial and budgetary control and of accounting, auditing and reporting for Crown corporations generally, Part VIII of the Financial Administration Act was enacted in 1951 and brought into operation by proclamation on Oct. 1, 1952. Upon its enactment the financial provisions of the Government Companies Operation Act were repealed.

One of the more interesting features of the later legislation is the attempt that has been made to define and classify Crown corporations.\* The Act defines a Crown corporation as a corporation that is ultimately accountable, through a Minister, to Parliament for the conduct of its affairs and establishes three classes of corporation—departmental, agency and proprietary.

*Departmental Corporations.*—A departmental corporation is defined as a Crown corporation that is a servant or agent of Her Majesty in right of Canada and is responsible for administrative, supervisory or regulatory services of a governmental nature. Twelve departmental corporations are listed in Schedule B to the Act:—

Agricultural Stabilization Board (formerly Agricultural Prices Support Board)  
Atomic Energy Control Board  
Canadian Maritime Commission  
Director of Soldier Settlement  
The Director, The Veterans' Land Act  
Dominion Coal Board  
Economic Council of Canada  
Fisheries Prices Support Board  
Municipal Development and Loan Board  
National Gallery of Canada  
National Research Council  
Unemployment Insurance Commission.

\* Not all Crown corporations are subject to the provisions of the Financial Administration Act. For example, the Canadian Wheat Board, the Bank of Canada and its subsidiary the Industrial Development Bank, because of the special nature of their functions, are excluded from operations of the Crown corporations Part of the Act and are governed by their own Acts of incorporation as is also the Eastern Rockies Forest Conservation Board, a joint federal-provincial enterprise, and the Canadian Corporation for the 1967 World Exhibition. The Canada Council was set up under the Canada Council Act (assented to Mar. 28, 1957) as a Crown corporation but has been declared not an agency of the Crown and hence is not included in the Schedules to the Financial Administration Act; the same situation applies to the Atlantic Development Board set up under the Atlantic Development Board Act (assented to Dec. 20, 1962), the Science Council of Canada (assented to May 12, 1966), the Company of Young Canadians (assented to July 11, 1966) and the National Arts Centre Corporation (assented to July 15, 1966).

*Agency Corporations.*—An agency corporation is defined as a Crown corporation that is an agent of Her Majesty in right of Canada and is responsible for the management of trading or service operations on a quasi-commercial basis or for the management of procurement, construction or disposal activities on behalf of Her Majesty in right of Canada. The following agency corporations are listed in Schedule C to the Financial Administration Act or have been subsequently added to that Schedule by the Governor in Council:—

Atomic Energy of Canada Limited  
 Canadian Arsenals Limited  
 Canadian Commercial Corporation  
 Canadian National (West Indies) Steamships Limited  
 Canadian Patents and Development Limited  
 Centennial Commission  
 Crown Assets Disposal Corporation  
 Defence Construction (1951) Limited  
 National Battlefields Commission  
 National Capital Commission (formerly Federal District Commission)  
 National Harbours Board  
 Northern Canada Power Commission (formerly Northwest Territories Power Commission)  
 Park Steamship Company Limited.

Two corporations, Canadian Sugar Stabilization Corporation Limited and Commodity Prices Stabilization Corporation Limited, listed in Schedule C when the Financial Administration Act was proclaimed, have since discontinued operations and surrendered their charters. By an Order in Council of June 15, 1955, the name of the Northwest Territories Power Commission (now Northern Canada Power Commission) was deleted from Schedule D and added to Schedule C, effective Apr. 1, 1954. Also, the Canadian National (West Indies) Steamships Limited and Park Steamship Company Limited are both virtually inoperative.

*Proprietary Corporations.*—A proprietary corporation is defined as a Crown corporation that (1) is responsible for the management of lending or financial operations, or for the management of commercial or industrial operations involving the production of or dealing in goods and the supplying of services to the public, and (2) is ordinarily required to conduct its operations without parliamentary appropriations. The following proprietary corporations are listed in Schedule D to the Act or have been subsequently added to that Schedule by the Governor in Council:—

Air Canada (formerly Trans-Canada Air Lines)  
 Canadian Broadcasting Corporation  
 Canadian Overseas Telecommunication Corporation  
 Central Mortgage and Housing Corporation  
 Eldorado Aviation Limited  
 Eldorado Mining and Refining Limited  
 Export Credits Insurance Corporation  
 Farm Credit Corporation (formerly Canadian Farm Loan Board)  
 National Railways, as defined in the Canadian National-Canadian Pacific Act, 1933  
 Northern Transportation Company Limited  
 Polymer Corporation Limited  
 St. Lawrence Seaway Authority  
 Seaway International Bridge Corporation Limited (formerly Cornwall International Bridge Company Limited), subsidiary to the St. Lawrence Seaway Authority.

Departmental corporations are governed by the provisions of the Financial Administration Act that are applicable to departments generally. Agency and proprietary corporations, however, are subject to the provisions of the Crown corporations Part of the Act although, if there is any inconsistency between the provisions of that Part and those of any other Act applicable to a corporation, the Act provides that the latter prevail. There is provision in the Part for the control and regulation of such matters as corporation budgets and bank accounts, the turning over to the Receiver General of surplus money, limited loans for working-capital purposes, the awarding of contracts and the establish-



ment of reserves, the keeping and auditing of accounts, and the preparation of financial statements and reports and their submission to Parliament through the appropriate Minister.

A further form of control is exercised by Parliament through the power to vote financial assistance. This may take different forms. For some corporations, capital may be provided by parliamentary grants, loans or advances that may subsequently be converted into capital stock or bonds; for others it may be by the issue of capital stock to be subscribed and paid for by the Government; or by the sale of bonds to either the Government or the public. A few corporations have financed all or a portion of their requirements from their own resources or earnings.

Prior to 1952, Crown corporations did not pay corporate income taxes. However, the Income Tax Act was later amended so that, in respect of financial years commencing after Jan. 1, 1952, proprietary Crown corporations pay taxes on income earned in the same manner as any privately owned corporation. One desirable result of this amendment is that the financial statements of these Crown companies are now more comparable with those of private industry, with which in some instances they are in competition, and thus it is easier to assess the relative efficiency of their operations.

The functions of the various Crown corporations are given briefly in the following paragraphs. For a number of them, further details are included in the Chapters dealing with the subjects concerned (see Index).

**Agricultural Stabilization Board.**—The Board was established in 1958 (SC 1957-58, c. 22) to administer the provisions of the Agricultural Stabilization Act. The Board reports to Parliament through the Minister of Agriculture and routine administrative matters are handled through departmental channels.

**Air Canada.**—Formerly Trans-Canada Air Lines, the Corporation was incorporated by Act of Parliament in 1937 to provide a publicly owned air transportation service, with powers to carry on its business throughout Canada and outside of Canada. Air Canada now maintains passenger, mail and commodity traffic services over nation-wide routes and also services to the United States, England, Scotland, Ireland, France, Switzerland, West Germany, Austria, Bermuda, the Bahamas, Jamaica, Antigua, Barbados and Trinidad. Air Canada is responsible to Parliament through the Minister of Transport.

**Atlantic Development Board.**—The Act establishing this Board (SC 1962-63, c. 10) received Royal Assent on Dec. 20, 1962. The Board is composed of a chairman and four other members appointed by Order in Council and reports to Parliament through the Minister of Transport. Its functions are to inquire into and report upon measures and projects for fostering the economic growth and development of the Atlantic region of Canada and to assess and make recommendations with respect to particular projects referred to it by the Minister.

**Atomic Energy Control Board.**—By Act of Parliament (RSC 1952, c. 11) proclaimed October 1946, the regulation and control of atomic energy in Canada was placed under the Atomic Energy Control Board. The Board reports to Parliament through the Minister of Energy, Mines and Resources.

**Atomic Energy of Canada Limited.**—This Crown company was incorporated in February 1952 under the Atomic Energy Control Act, 1946 (RSC 1952, c. 11) to take over from the National Research Council on Apr. 1, 1952 the operation of the Chalk River project. The main activities of the company are (a) the development of economic nuclear power, (b) scientific research and development in the atomic energy field, (c) the operation of nuclear reactors and (d) the production of radioactive isotopes and associated equipment such as Cobalt-60 beam therapy units for the treatment of cancer. The company reports to Parliament through the Minister of Energy, Mines and Resources.

**Bank of Canada.**—Legislation of 1934 (RSC 1952, c. 13) provided for the establishment of a central bank in Canada, the function of which is to regulate credit and currency, to control and protect the external value of the Canadian dollar and to stabilize the level of production, trade, prices and employment so far as may be possible within the scope of monetary action. The Bank acts as the fiscal agent of the Government of Canada, manages the public debt and has the sole right to issue notes for circulation in Canada. The Bank is managed by a Board of Directors appointed by the Government and composed of a Governor, a Deputy Governor and 12 Directors; the Deputy Minister of Finance is also a member of the Board. The Bank reports to Parliament through the Minister of Finance and is governed by its own Act of incorporation. (See footnote, p. 142.)

**The Canada Council.**—Established by Order in Council dated Apr. 15, 1957, this corporation, composed of a chairman, a vice chairman and 19 other members, a director and an associate director, operates under the terms of the Canada Council Act, assented to Mar. 28, 1957. The function of the Council is to encourage the arts, humanities and social sciences in Canada. Its work is financed mainly by two funds, originally of \$50,000,000 each, set up by Parliament when the Council was created: the University Capital Grants Fund, now nearly depleted, and the Endowment Fund, of which only the income may be used. In addition, the Canadian Parliament, on Apr. 3, 1965, approved a special appropriation of \$10,000,000 to enable the Council to meet its minimum foreseeable requirements during the next few years in the furtherance of the general purposes set out in Sect. 8 of the Act. In the making, managing and disposing of investments under the Act, the Council has the advice of an Investment Committee of five, including the chairman and another member of the Council. The proceedings of the Council are reported each year to Parliament through the Secretary of State. (See footnote, p. 142.)

**Canadian Arsenals Limited.**—This company was established under the Companies Act by Letters Patent dated Sept. 20, 1945 and is subject to the Government Companies Operation Act (RSC 1952, c. 133) and certain provisions of the Financial Administration Act (RSC 1952, c. 116). The company was set up to take over and operate Crown-owned plants and equipment. It manufactures small arms and a wide variety of ammunition and components and has extensive facilities for the filling and assembly of artillery, ammunition, mines, bombs, grenades, rockets and other specialties up to torpedo warheads. Its Divisions, together with the locations of their plants, are as follows: Dominion Arsenal Division (Quebec City and Val Rose, Que.); Small Arms Division (Long Branch, Ont.); Filling Division (St. Paul l'Ermite, Que.). The company reports to Parliament through the Minister of Defence Production.

**Canadian Broadcasting Corporation.**—The CBC functions under the Broadcasting Act, 1958, which continues the Corporation as a Crown agency charged with the operation of a national broadcasting service. It has the authority to maintain and operate broadcasting stations and networks and to originate and secure programs from within and outside Canada. This national radio and television service is financed through annual grants from Parliament and revenues from commercial operations.

The Corporation consists of 11 directors appointed by the Governor in Council and chosen to give representation to the principal geographical divisions of the country. The Secretary of State acts as spokesman for the Corporation in the Cabinet and the House of Commons. The President and Vice President are full-time executives appointed for a period of seven years; the other nine Directors are appointed for periods of three years and may serve two consecutive terms. The President is the chief executive of the Corporation and, with the Vice President, is responsible for the conduct of the affairs of the Corporation. As the chief executive, the President receives, interprets and applies the policies and directives of the Directors of the Corporation and establishes administrative and operating policies to control the activities of all operating units—English Networks, French Networks, Regional Broadcasting and the International Service—and of corporate staff departments—Programming, Planning, Engineering and Finance.

In practice, attention of the President is directed primarily to the broad fields of corporate policy, long-range planning and financing. He reports on activities to the Directors of the Corporation and the conduct of relations with Parliament, the Board of Broadcast Governors and the public. The Vice President assists the President in his role of chief executive by assuming primary responsibility for the current operations of the Corporation.

The Corporation's Head Office is situated in Ottawa. Headquarters for English Networks is located in Toronto and for French Networks in Montreal and Regional Headquarters are situated in St. John's for Newfoundland, Halifax for the Maritime Provinces, Winnipeg for the Prairie Provinces, and Vancouver for British Columbia. Headquarters for the Northern and Armed Forces Services is in Ottawa and that for the International Service is in Montreal.

**Canadian Commercial Corporation.**—This Corporation was established on May 1, 1946 by the Canadian Commercial Corporation Act (RSC 1952, c. 35). Its principal purpose is to assist in the development of trade between Canada and other nations by acting on behalf of the Canadian Government as the contracting agency when other countries wish to purchase defence or other supplies and services from Canada on a government-to-government basis. The Corporation may enter into transactions under the provisions of the Act for any department or agency of the Government of Canada.

The Corporation is operated by the Department of Defence Production with staff provided by the Department and reports to Parliament through the Minister of Defence Production.

**Canadian Corporation for the 1967 World Exhibition.**—This Corporation was established by Act of Parliament (SC 1962-63, c. 12) to plan, organize, hold and administer the Canadian Universal and International Exhibition, Montreal 1967, to be held on the occasion of the Centenary of Canadian Confederation. The Exhibition is one of the First Category, and Canada is the first country in the Americas to hold such an exhibition under a franchise of the International Bureau of Exhibitions.

The Exhibition, known as EXPO 67, will be held in Montreal Apr. 28 to Oct. 27, 1967, on a site prepared by the City in three main areas grouped around historic St. Helen's Island in the



middle of the St. Lawrence River. The theme, "Man and His World", is purported to demonstrate how, through the ages, man has met the challenge of his environment.

The Corporation is headed by a commissioner general and president; a deputy commissioner general and vice president; and a general manager. It reports to Parliament through the Minister of Trade and Commerce. The present address of the Corporation is Place Ville-Marie, Montreal; the telephone number is EXPosition 1967; and the cable address is Montexpo.

**Canadian Government Participation, 1967 Exhibition.**—This temporary government organization was set up officially on Oct. 24, 1963, following some months of study and preparatory work. It is not a Crown company but is nevertheless independent of Federal Government departments. The Commissioner General has the status of a Deputy Head and reports directly to the Minister of Trade and Commerce. He is entrusted with the planning, construction and operation of buildings and exhibits that will depict Canada, Canadians and Canadian achievements for better comprehension by visitors from all parts of the world to the International Exhibition, EXPO 67, to be held in Montreal Apr. 28 to Oct. 27, 1967.

**Canadian Maritime Commission.**—This Commission was created in 1947 by the Canadian Maritime Commission Act (RSC 1952, c. 38). It considers and recommends policies and measures necessary for the operation, maintenance, manning and development of a merchant marine and a shipbuilding and ship-repairing industry. The Commission administers the Canadian Vessel Construction Assistance Act (RSC 1952, c. 43) and the steamship subsidies voted by Parliament. Other functions include consultation with the Department of National Revenue in the administration of the laws relating to the coasting trade of Canada and the co-ordination of the overseas movement of men and material for the Department of National Defence. It has responsibility in international matters relating to merchant shipping, such as NATO, IMCO and other international bodies. The Chairman has the status of a Deputy Minister and the Commission reports to Parliament through the Minister of Transport.

**Canadian National Railways.**—The Canadian National Railway Company was incorporated (SC 1919, c. 13) to operate and manage a national system of railways, including the Canadian Northern Railway System, the Canadian Government Railways and all lines entrusted to it by Order in Council. In 1923 the Grand Trunk Railway Company of Canada was amalgamated with the Canadian National Railway Company and since 1923 a number of railway lines acquired by the Government have been entrusted to the Company for operation and management, including the Newfoundland Railway and steamship services in 1949, the Temiscouata Railway in 1950, and the Hudson Bay Railway and the Northwest Communication System in 1953. The Canadian National Railways Act, 1919 was repealed in 1955 and the Canadian National Railways Act (SC 1955, c. 29) substituted therefor.

The Canadian National Railway Company is controlled by a chairman and board of directors appointed by the Governor in Council, who report to Parliament through the Minister of Transport.

**Canadian Overseas Telecommunication Corporation.**—This Crown company was created on Dec. 10, 1949 by Act of Parliament (RSC 1952, c. 42) to acquire for public operation external telecommunication assets in Canada, in keeping with the Commonwealth Telegraph Agreement signed May 11, 1948. This Agreement was designed to bring about the consolidation and strengthening of the radio and cable communication systems of the Commonwealth. The Corporation is responsible to Parliament through the Minister of Transport.

**Canadian Patents and Development Limited.**—Canadian Patents and Development Limited is a Crown corporation set up in 1947, pursuant to authority granted in an amendment to the Research Council Act passed in 1946. The primary purpose of the company, which is a subsidiary of the National Research Council, is to make available to industry, through licensing arrangements, commercial inventions originating in the NRC laboratories. The company also handles inventions referred to it from the research establishments of Federal Government departments and agencies, Canadian universities, and provincial research councils. Any profits that the company may derive from licensing arrangements are used for further research and development. The company's Board of Directors is composed of representatives of the National Research Council of Canada, government departments and agencies, industry and the universities. The company reports to Parliament through the Minister of Industry in his capacity as Chairman of the Committee of the Privy Council on Scientific and Industrial Research.

**Canadian Wheat Board.**—The Board was incorporated in 1935 under the Canadian Wheat Board Act to market, in an orderly manner, in the interprovincial and export trade, grain grown in Canada. Its powers include authority to buy, take delivery of, store, transfer, sell, ship or otherwise dispose of grain. Except as directed by the Governor in Council, the Board was not originally authorized to buy grain other than wheat but, since Aug. 1, 1949, it may also buy oats and barley if authorized to do so by Regulation approved by the Governor in Council. Only grain produced in the designated area, which includes Manitoba, Saskatchewan, Alberta and parts of British Columbia and Ontario, is purchased by the Board, which controls the delivery of grain into elevators and railway cars in that area as well as the interprovincial movement and export of wheat, oats and barley generally. The Board is governed by its own Act of incorporation (see footnote, p. 142). It reports to Parliament through the Minister of Trade and Commerce.



**Centennial Commission.**—The Centennial Commission is a Crown corporation established by Parliament (SC 1960-61, c. 60 as amended) and responsible for the co-ordination and administration of projects relating to the Centennial of Confederation in Canada. It consists of a commissioner, an associate commissioner and not more than 12 directors, each of whom is appointed by the Governor in Council. The Commission is responsible to Parliament through the Secretary of State.

**Central Mortgage and Housing Corporation.**—This Corporation was incorporated by Act of Parliament (RSC 1952, c. 46) in December 1945 to administer the National Housing Acts. Under the National Housing Act, 1954 (SC 1953-54, c. 23, as amended), the Corporation insures mortgage loans made by approved lenders and makes direct loans for new home-ownership, rental housing and existing housing in urban renewal areas; guarantees home improvement loans made by banks; undertakes subsidized rental housing projects and land assembly developments under federal-provincial arrangements; offers loans and subsidies for public housing projects; makes loans for land assembly projects to be used for public housing; makes loans to limited-dividend and non-profit housing companies for low-rental housing projects; makes loans for university housing projects and to provinces and municipalities for sewage treatment projects designed to eliminate water and soil pollution; makes contributions and loans to provinces and municipalities for urban renewal operations; conducts housing research; encourages urban planning and owns and manages rental housing units including those built for war workers and veterans. The Corporation arranges for and supervises construction of housing projects on behalf of the Department of National Defence and other government departments and agencies. The Corporation is responsible to Parliament through the Minister of Labour.

**Company of Young Canadians.**—The Act establishing this corporation (SC 1966, c. 36) was assented to on July 11, 1966. The corporation consists of a Council of the Company and persons who are volunteer-members. The Council has 15 members, 10 of whom are elected by the volunteer-members and five of whom are appointed by the Governor in Council. Term of office for both elected and appointed members is three years. The Act provides for the establishment of an Interim Council of not more than 20 members to hold office until the members of the Council are elected or appointed. The objects of the Company are to support, encourage and develop programs for social, economic and community development in Canada or abroad through voluntary service. The corporation reports to Parliament through the Prime Minister.

**Crown Assets Disposal Corporation.**—This Corporation is established under the Surplus Crown Assets Act (RSC 1952, c. 260) and is subject to the Financial Administration Act (RSC 1952, c. 116). In June 1944, War Assets Corporation was established by statute to replace War Assets Corporation Limited which had been incorporated in 1943. In 1949 the name of War Assets Corporation was changed to Crown Assets Disposal Corporation. The Corporation's function is to dispose of surplus Crown assets. It is responsible to Parliament through the Minister of Defence Production.

**Defence Construction (1951) Limited.**—Defence Construction Limited began its operations in November 1950 as a Crown agency responsible for awarding and supervising defence construction projects. On July 12, 1951, under authority of the Defence Production Act, the present company was established under the name of Defence Construction (1951) Limited and took over the responsibilities of the former agency. From inception until Apr. 1, 1951 the company reported to the Minister of Trade and Commerce, from which date it reported to the Minister of Defence Production until the Minister of Industry was given the powers of the Minister of Defence Production on July 22, 1963. On Apr. 22, 1965, the control and supervision of the company was transferred to the Minister of National Defence.

The company's prime responsibility is the construction of defence projects, including the calling and review of all tenders and subsequent contract awards, the supervision of actual construction work in the field, and the administration of all projects from the Ottawa Head Office. More specifically, however, the company's operations cover five distinct spheres: defence projects in Canada for the Department of National Defence; all defence projects in Europe for the Department of National Defence under the North Atlantic Treaty Organization agreement; maintenance and repair contracts at Department of National Defence sites throughout Canada; defence construction for the U.S. Government in Canada; and advice and assistance in construction aspects of certain projects such as the Canadian Corporation for the 1967 World Exhibition.

**Director of Soldier Settlement and Director of the Veterans' Land Act.**—The Director of Soldier Settlement (under the Act of 1919) is also the Director of the Veterans' Land Act, and in each capacity is legally a corporation sole. For administrative purposes, however, the programs carried on under both Acts constitute integral parts of the services provided by the Department of Veterans Affairs.

**Dominion Coal Board.**—The Board, established as a department in 1947 by the Dominion Coal Board Act (RSC 1952, c. 86), has the responsibility of studying and recommending to the Government policies concerning the production, import, distribution and use of coal. The Chairman has the status of a Deputy Minister and the Board reports to Parliament through the Minister

of Energy, Mines and Resources. The Board administers transportation and other subventions relating to coal and also administers loans authorized under the Coal Production Assistance Act (RSC 1952, c. 173, as amended).

**Eastern Rockies Forest Conservation Board.**—The Board was appointed in 1947 under the Eastern Rocky Mountain Forest Conservation Act which authorized an agreement between the Government of Canada and the Province of Alberta relating to the protection and conservation of the forests of that portion of the eastern slope of the Rocky Mountains which gives rise to the major tributaries of the Saskatchewan River. Its function is to determine the policy necessary to obtain the greatest possible flow of water in the Saskatchewan River system. The planning of programs of forest use and conservation is a joint duty of the Board and the provincial Forest Service; the administration of the conservation area is a function of the province. In April 1962, a Technical Co-ordinating Committee for Watershed Research was established to undertake study of the related needs defined by the Board. The Committee's programs, undertaken by seven co-operating agencies of the Federal and Alberta Governments, are co-ordinated by an officer of the federal Department of Forestry and Rural Development.

Funds for capital expenditures during the first seven years of the agreement were provided by the Federal Government with maintenance expenditures being paid by the Province of Alberta. In 1955 the province undertook the responsibility of financing both capital improvements and maintenance work. Currently, one member of the three-man Board is appointed by the Federal Government and the province has the right to appoint two members. The choice of one of the three members as Board chairman is vested in the province. The Board reports to Parliament through the Minister of Forestry and Rural Development. (See footnote, p. 142.)

**Economic Council of Canada.**—This corporation, established under legislation passed on Aug. 2, 1963 (SC 1963, c. 11), consists of a full-time chairman and two full-time directors appointed for a term not to exceed seven years and not more than 25 additional members to serve part-time and without remuneration. The Council is to be as representative as possible of labour, agriculture and primary industries, secondary industry and commerce, and the general public. Its functions are to advise and recommend measures that will achieve in Canada the highest possible levels of employment and efficient production so that the country may enjoy a high and consistent rate of economic growth and that all Canadians may share in rising living standards; to carry on the duties of the former National Productivity Council which were to promote and expedite continuing improvement in productive efficiency in the various aspects of Canadian economic activity; and to publish an annual review of medium- and long-term economic prospects and problems. The Council reports to Parliament through the Prime Minister.

**Eldorado Aviation Limited.**—This company was incorporated Apr. 23, 1953 to carry air traffic, both passenger and freight, for Eldorado Mining and Refining Limited and its wholly owned subsidiary, Northern Transportation Company Limited. It reports to Parliament through the Minister of Energy, Mines and Resources.

**Eldorado Mining and Refining Limited.**—Set up in 1944 under the name of Eldorado Mining and Refining (1944) Limited (the date was omitted from the name in June 1952), the company's business is the mining and refining of uranium and the production of nuclear fuels in Canada. The company has also entered into contracts for the purchase of uranium concentrates from private producers in Canada. It reports to Parliament through the Minister of Energy, Mines and Resources.

**Export Credits Insurance Corporation.**—This Corporation commenced operations in 1945 under the Export Credits Insurance Act, 1944 (RSC 1952, c. 105, as amended) and is administered by a Board of Directors (including the Deputy Minister of Trade and Commerce and the Deputy Minister of Finance) with the advice of an Advisory Council. Its function is to insure Canadian exporters against non-payment by foreign buyers arising out of credit and political risks involved in foreign trade. The Corporation is also authorized to provide financing in respect of an export transaction involving extended credit terms. It reports to Parliament through the Minister of Trade and Commerce.

**Farm Credit Corporation.**—This Corporation was established on Oct. 5, 1959 (SC 1959, c. 43) for the purpose of providing for the extension of long-term mortgage credit to farmers. The Corporation also administers the Farm Machinery Syndicate Credit Act and is responsible to Parliament through the Minister of Agriculture.

**Fisheries Prices Support Board.**—The Board was set up in July 1947 (RSC 1952, c. 120) to recommend to the Government price support measures when severe price declines occur. The Board functions under the direction of the Minister of Fisheries and consists of a chairman, who is a senior officer of the Department of Fisheries, and five members chosen from private and co-operative firms in the industry. The Board has authority to buy fishery products and to sell or otherwise dispose of them or to pay producers the difference between a price prescribed by the Board and the average price the product actually commands.

**Industrial Development Bank.**—The Bank, a subsidiary of the Bank of Canada, was incorporated in 1944 to provide loans to industrial enterprises where financing is not available through recognized lending organizations. (See footnote, p. 142.)



**Medical Research Council.**—Established in November 1960, this Council operates as a virtually autonomous unit within the administrative framework of the National Research Council. It is composed of a chairman, a secretary and 15 members who serve for a three-year term, renewable once. The primary aim of the Council is the development of medical research and the support of medical research workers in the university centres of Canada. It reports to Parliament through the Minister of Industry in his capacity as Chairman of the Committee of the Privy Council on Scientific and Industrial Research.

**Municipal Development and Loan Board.**—The Act establishing this Board (SC 1963, c. 13) received Royal Assent on Aug. 2, 1963. The Board comprises a chairman and four other members, all senior officials of government, appointed by the Governor in Council, and reports to Parliament through the Minister of Finance. The Board was set up to make loans, up to a total amount of \$400,000,000, to municipalities to assist in the construction of additional municipal capital projects, thereby providing increased employment during the period 1963-66. By Mar. 31, 1966, the last date on which a loan could be approved, almost the entire fund had been committed, although actual loan payments continued to be made subsequent to that date as projects were completed.

**National Arts Centre Corporation.**—The Act establishing this Corporation (SC 1966, c. 48) was assented to July 15, 1966. The Corporation consists of a Board of Trustees composed of a chairman, a vice-chairman, the Mayors of Ottawa and Hull, the Director of the Canada Council, the President of the Canadian Broadcasting Corporation, the Government Film Commissioner and nine other members appointed by the Governor in Council for terms not exceeding three years, except for the first appointees whose terms range from two to four years. The objects of the Corporation are to operate and maintain the National Arts Centre, to develop the performing arts in the National Capital Region and to assist the Canada Council in the development of the performing arts elsewhere in Canada. The Corporation reports to Parliament through the Secretary of State.

**National Battlefields Commission.**—This Commission was established by Act of Parliament in 1908 to preserve the Historic Battlefields at Quebec City. The Commission is composed of nine members, seven appointed by the Federal Government and one each by the Provinces of Ontario and Quebec. The Commission is supported by annual appropriations of the Federal Government and is responsible to Parliament through the Minister of Indian Affairs and Northern Development.

**National Capital Commission.**—This Commission is a Crown agency created by the National Capital Act (SC 1958, c. 37), proclaimed Feb. 6, 1959. It is the lineal descendant of the Federal District Commission. The Commission is served by a full-time paid chairman and comprises a total of 20 members representative of the ten provinces of Canada. Its work force fluctuates between 600 and 850, depending on the season.

Co-ordination and development of public lands in the National Capital Region are undertaken by direct planning and construction by the Commission's staff; by co-operation with municipalities; by provision of planning aid or financial assistance in municipal projects; and by advising the Department of Public Works on the siting and appearance of all Federal Government buildings in the 1,800-sq. mile National Capital Region. The Commission reports to Parliament through the Minister of Public Works.

**National Gallery of Canada.**—The beginnings of the National Gallery of Canada are associated with the founding of the Royal Canadian Academy of Arts in 1880. The Marquis of Lorne, then Governor General, had recommended and assisted the founding of the Academy. One of the three tasks he assigned to that institution was the establishment of a National Gallery at the seat of government. By Act of Parliament in 1913, re-enacted in 1951, the National Gallery was placed under the management of a Board of Trustees appointed by the Governor General in Council and now operates under the National Gallery Act (RSC 1952, c. 186). It is responsible to Parliament through the Secretary of State.

The first charge of the National Gallery is the development, care and display of the national art collections. Its services to the public include a large reference library on the history of art and related subjects; an Exhibition Extension Branch through which travelling exhibitions, lectures and the showing of art films, and guided tours of the Gallery at Ottawa are conducted; the production of art publications and reproductions; and a National Conservation Research Laboratory.

**National Harbours Board.**—The Board was established by Act of Parliament in 1936. It is responsible for the administration of port facilities at the harbours of St. John's, Nfld.; Halifax, N.S.; Saint John, N.B.; Chicoutimi, Quebec, Trois-Rivières and Montreal, Que.; Vancouver, B.C.; and Churchill, Man.; the Jacques Cartier and Champlain Bridges at Montreal, Que.; and the grain elevators at Prescott and Port Colborne, Ont. The Board reports to Parliament through the Minister of Transport.

**National Research Council of Canada.**—This is an agency of the Canadian Government established in 1916 to promote scientific and industrial research. The Council operates science and engineering laboratories in Ottawa, Halifax and Saskatoon; gives direct financial support to research carried out in Canadian university and industrial laboratories; sponsors Associate Committees co-ordinating research on specific problems of national interest; and develops and main-



tains the nation's primary physical standards. Other activities include the provision of free technical information to manufacturing concerns; the publication of research journals; and representation of Canada in International Scientific Unions. Patentable inventions developed in the Council's laboratories are made available for manufacture through a subsidiary company, Canadian Patents and Development Limited (see p. 146). The National Research Council consists of a president, three vice presidents, and 17 members representing Canadian universities, industry and labour. The Council is incorporated under the Research Council Act (RSC 1952, c. 239, as amended), and reports to Parliament through the Minister of Industry in his capacity as Chairman of the Committee of the Privy Council on Scientific and Industrial Research.

**Northern Canada Power Commission.**—The Commission was established by Act of Parliament in 1948 (RSC 1952, c. 196) to provide power to points in the Northwest Territories where a need developed and where power could be supplied on a self-sustaining basis; the Act was amended in 1950 to give the Commission authority to provide similar services in the Yukon Territory. The name of the Commission (formerly the Northwest Territories Power Commission) was changed in 1956. It is composed of a chairman and two members appointed by the Governor in Council and reports to Parliament through the Minister of Indian Affairs and Northern Development.

The Commission operates three hydro-electric plants in the Northwest Territories (two on the Snare River near Yellowknife and one on the Taltson River near Fort Smith) and two hydro plants in the Yukon Territory (one on the Yukon River at Whitehorse and the other on the Mayo River near Mayo). Diesel-electric plants are operated at Fort Smith, Fort Simpson, Fort Resolution and Frobisher Bay, N.W.T., and at Field, B.C.; diesel-electric power and central heating plants at Inuvik and Frobisher Bay, N.W.T., and Moose Factory, Ont.; and water supply and sewerage systems at Inuvik and Moose Factory. The Commission also operates in the Northwest Territories, on behalf of the Department, diesel-electric plants at Fort McPherson and Aklavik, heating plants at Fort McPherson, Fort Simpson and Frobisher Bay, and domestic water supply and sewerage systems at Fort McPherson, Fort Simpson and Frobisher Bay.

**Northern Transportation Company Limited.**—This Company was incorporated in 1947 under the title of Northern Transportation Company (1947) Limited, the date being omitted from the name in 1952. Previously a Company chartered under an Alberta statute, it has been a wholly owned subsidiary of Eldorado Mining and Refining Limited since that Crown company was established and carries out the business of a common carrier in the Mackenzie River watershed and western Arctic. The Company is responsible to Parliament through the Minister of Indian Affairs and Northern Development.

**Polymer Corporation Limited.**—This Corporation was incorporated in 1942 by Letters Patent and is subject to the Government Companies Operation Act (RSC 1952, c.133) and the Financial Administration Act (RSC 1952, c. 116). Its head office and plant are located at Sarnia, Ont., where it produces synthetic rubbers, latices, resins and related products. Subsidiary operations for the production of butyl and specialty rubbers are located in Belgium and France, respectively, and an international marketing subsidiary is located in Switzerland. The Company reports to Parliament through the Minister of Defence Production.

**Science Council of Canada.**—The Act establishing the Science Council of Canada (SC 1966, c. 19) received assent on May 12, 1966. The Council is to consist of not more than 25 members each having a specialized interest in science or technology and four associate members chosen from among officers or employees of the Federal Government. Members hold office for not more than three years and associate members hold office during pleasure. All are appointed by the Governor in Council. The duties of the Science Council are to assess in a comprehensive manner Canada's scientific and technological resources, requirements and potentialities and to make recommendations thereon. The Council reports to Parliament through the Prime Minister.

**St. Lawrence Seaway Authority.**—The St. Lawrence Seaway Authority was established by Act of Parliament in 1951 (RSC 1952, c. 242) and came into force by proclamation on July 1, 1954. The Authority was incorporated for the purposes of constructing, maintaining and operating all such works as may be necessary to provide and maintain, either wholly in Canada or in conjunction with works undertaken by an appropriate authority in the United States, a deep waterway between the Port of Montreal and Lake Erie. The Crown corporation, Seaway International Bridge Corporation Limited, is subsidiary to the St. Lawrence Seaway Authority. The Authority is composed of a president, a vice president and a member, and reports to Parliament through the Minister of Transport.

**Unemployment Insurance Commission.**—The Commission was appointed on Sept. 24, 1940 under the provisions of the Unemployment Insurance Act, 1940 (RSC 1952, c. 273). It is composed of three commissioners appointed by the Governor in Council, of whom one is designated chief commissioner. One commissioner, other than the chief commissioner, is appointed after consultation with organizations representative of workers and the other after consultation with organizations representative of employers. The Chief Commissioner is appointed to hold office for a period of ten years and each of the other Commissioners to hold office for a period not exceeding ten years. The Commission is responsible to Parliament through the Minister of Labour.

## Section 4.—Acts Administered by Federal Departments\*

## List of the Principal Acts of Parliament Administered by Departments of the Government of Canada

NOTE.—Copies of individual Acts of Parliament may be obtained from the Queen's Printer, Ottawa, at prices of from 10 cents to \$1.50 per copy, according to number of pages. Where duplications of certain Acts appear in the list, parts of these Acts are administered by the Departments given.

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
<b>Agriculture—</b> RSC 1952	4 Agricultural Products Board	<b>Energy, Mines and Resources—</b> concluded	
	5 Agricultural Products Co-operative Marketing	RSC 1952	86 Dominion Coal Board
	6 Agricultural Products Marketing		95 Emergency Gold Mining Assistance
	9 Animal Contagious Diseases		102 Explosives
22, 305	Canada Dairy Products		173 Coal Production Assistance
25, 308	Canada Grain	1952-53	21 Canada Water Conservation Assis- tance
47	Cheese and Cheese Factory Im- provement	1955	47 International River Improvements
52, 313	Cold Storage	1956	10 Northern Ontario Pipe Line Crown Corporation
66	Department of Agriculture	1957-58	25 Atlantic Provinces Power Develop- ment
81	Destructive Insect and Pest	1959	46 National Energy Board
101	Experimental Farm Stations		
126	Fruit, Vegetables and Honey		
141	Hay and Straw Inspection		
155	Inspection and Sale		
167	Live Stock and Live Stock Prod- ucts	<b>External Affairs—</b> 1911	28 Respecting the International Boundary Waters Treaty and the existence of the International Joint Commission (amended 1914, c. 5, and 1922, c. 43)
168	Live Stock Pedigree		
172	Maple Products Industry	1948	71 Carrying into effect the Treaties of Peace between Canada and Italy, Rumania, Hungary and Finland
177	Meat and Canned Foods		
180	Milk Test		
209	Pest Control Products	1952	50 Carrying into effect the Treaty of Peace between Canada and Japan
213	Prairie Farm Assistance	RSC 1952	68 Department of External Affairs
214	Prairie Farm Rehabilitation (amended 1955, c. 39)		122 Food and Agriculture Organization of the United Nations
294	Wheat Co-operative Marketing		142 High Commissioner in the United Kingdom
1955	27 Canada Agricultural Products Standards		218 Privileges and Immunities (NATO)
36	Meat Inspection		219 Privileges and Immunities (Inter- national Organizations) (amend- ed 1965, c. 47)
1957	27 Fertilizers		275 United Nations
1957-58	22 Agricultural Stabilization	1953-54	54 Diplomatic Immunities (Common- wealth Countries)
1959	35 Seeds	1964-65	19 Roosevelt-Campobello Interna- tional Park Commission
42	Crop Insurance		22 Territorial Sea and Fishing Zones
43	Farm Credit (amended 1960-61, c. 36, 1962-63, c. 7 and 1964, c. 12)		
44	Humane Slaughter of Food Ani- mals		
1960	14 Feeds		
1964-65	29 Farm Machinery Syndicates Credit		
1966	34 Canadian Dairy Commission		
<b>Auditor General—</b> RSC 1952	116 Financial Administration	<b>Finance—</b>	
<b>Defence Production—</b> RSC 1952	35 Canadian Commercial Corporation	RSC 1952	12 Appropriation (Annual)
62	Defence Production		Canadian National Railways Fi- nancing and Guarantee (Annual)
260	Surplus Crown Assets		13 Bank
<b>Energy, Mines and Resources—</b> RSC 1952	11 Atomic Energy Control		15 Bank of Canada
26	Canada Lands Surveys (except Part III)		15 Bills of Exchange
34	Canadian Coal Equality		19 Bretton Woods Agreements
73	Resources and Technical Surveys		44 Canadian Wheat Board
			82 Diplomatic Service (Special) Superannuation
			110 Farm Improvement Loans
			116 Financial Administration
			131 Gold Export
		151, 326	Industrial Development Bank

\* Compiled from information supplied by the respective Departments.

# List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—continued

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
<b>Finance—concluded</b>		<b>Indian Affairs and Northern Development—</b>	
RSC 1952 156	Interest	RSC 1908 57, 58	National Battlefields at Quebec
182	Municipal Grants	RSC 1927 87	Seed Grain
183	Municipal Improvements Assistance	88	Seed Grain Sureties
204	Pawnbrokers	1932 55	Waterton-Glacier International Peace Park
221	Provincial Subsidies	RSC 1952 26	Canada Lands Surveys (Part III)
232	Quebec Savings Banks	128	Game Export
245	Satisfied Securities	149	Indian
261, 336	Tariff Board	162	Land Titles
278	Veterans Business and Professional Loans	179	Migratory Birds Convention
296	Winding-up	189	National Parks
315	Currency, Mint and Exchange Fund	192	National Wildlife Week
1952-53 47	Public Service Superannuation	196	Northern Canada Power Commission
1953-54 28	Fire Losses Replacement Account	224	Public Lands Grants
1955 12	Members of Parliament Retiring Allowances	263	Territorial Lands
31	Canadian National Railways Refunding	300	Yukon Placer Mining
46	Fisheries Improvement Loans	301	Yukon Quartz Mining
1956 1	Prairie Grain Producers Interim Financing	331	Northwest Territories
2	Temporary Wheat Reserves	1952-53 39	Historic Sites and Monuments
29	Federal-Provincial Tax Sharing Arrangements	53	Yukon
1957-58 26	Beechwood Power Project	1953-54 4	Department of Northern Affairs and National Resources
1959 32	Public Service Pension Adjustment	<b>Industry—</b>	
1960 1	Prairie Grain Loans	1960-61 24	National Design Council
32	International Development Association	1963 3	Department of Industry
1960-61 5	Small Businesses Loans	1965 12	Area Development Incentives
58	Federal-Provincial Fiscal Arrangements	<b>Insurance—</b>	
1963 13	Municipal Development and Loan	RSC 1952 31	Canadian and British Insurance Companies
1964-65 24	Canada Student Loans	49	Civil Service Insurance
<b>Fisheries—</b>		70	Department of Insurance
RSC 1927 72	Fish Inspection	100	Excise Tax (Part I)
RSC 1952 61	Deep Sea Fisheries	125	Foreign Insurance Companies
69	Department of Fisheries	170	Loan Companies
119	Fisheries	251	Small Loans
120	Fisheries Prices Support	272	Trust Companies
121	Fisheries Research Board	296	Winding-up (Part III)
177	Meat and Canned Foods	1952-53 28	Co-operative Credit Associations
194	Northern Pacific Halibut Fishery (Convention)	<b>Justice—</b>	
244	Salt Fish Board	1940 43	Treachery
293	Whaling Convention	RSC 1952 1	Admiralty
1952-53 15	Coastal Fisheries Protection	28	Canada Prize
44	North Pacific Fisheries Convention	71	Department of Justice
1953-54 18	Northwest Atlantic Fisheries Convention	98	Exchequer Court
1955 34	Great Lakes Fisheries Convention	106	Expropriation
1957 11	Pacific Salmon Fisheries Convention	116	Financial Administration
31	Pacific Fur Seals Convention	127	Fugitive Offenders
1966 18	Fisheries Development	144	Identification of Criminals
<b>Forestry and Rural Development—</b>		154	Inquiries
1947 59	Eastern Rocky Mountain Forest Conservation	158	Interpretation
1952 175	Maritime Marshland Rehabilitation	159	Judges
1960 41	Forestry Development and Research	160	Juvenile Delinquents
1961 30	Agricultural and Rural Development (ARDA)	171	Lord's Day
1966 41	Fund for Rural Economic Development	198	Official Secrets
		210	Petition of Right
		234	Railway
		259, 335	Supreme Court
		299	Yukon Administration of Justice
		307	Canada Evidence
		322	Extradition
		1952-53 30	Crown Liability
		1953-54 51	Criminal Code
		1960 44	Canadian Bill of Rights
		1960-61 35	Narcotic Control



## List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—continued

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
<b>Labour—</b>		<b>National Library—</b>	
RSC 1927 110	Conciliation and Labour	RSC 1952 330	National Library
RSC 1952 72	Department of Labour		
108	Fair Wages and Hours of Labour		
132	Government Annuities	<b>National Revenue—</b>	
134, 323	Government Employees Compensation	<i>Taxation—</i>	
152	Industrial Relations and Disputes Investigation	1940 32	
178	Merchant Seamen Compensation	1940-41 15	
295	White Phosphorous Matches	1942-43 26	
1952-53 19	Canada Fair Employment Practices	1943-44 13	
1955 50	Unemployment Insurance	1944-45 38	Excess Profits Tax
1956 38	Female Employees Equal Pay	1945 19	
1957-58 24	Annual Vacations	1946 47	
1963 17	Maritime Transportation Unions Trustees	1947 32	
1964-65 38	Canada Labour (Standards) Code	1943-44 21	
		1950 27	Canada-U.S. Tax Convention (Income Tax)
		1951 5	
		1956 35	
		1944-45 31	Canada-U.S. Tax Convention (Succession Duties)
		1950 27	Canada-U.K. Succession Duty Agreement
		1946 39	Canada-N.Z. Income Tax Agreement
		1948 34	Canada-France Income Tax Convention
		1950-51 40	Canada-France Succession Duty Convention
		1952 18	Canada-Sweden Income Tax Agreement
		1950-51 41	
		42	Dominion Succession Duty
		RSC 1952 89	
		1956-57 22	
		1958 29	
		1960 29	
		1962-63 5	Estate Tax
		1964 8	
		RSC 1952 148	
		1952-53 40	
		1953-54 57	
		1955 54	
		1956 55	
		1957 39	
		1957 29	
		1957-58 17	
		1958 32	Income Tax
		1959 45	
		1960 43	
		1960-61 17	
		49	
		1962 8	
		1963 21	
		1964 13	
		1955 10	Canada - Ireland Income Tax Agreement
		11	Canada - Ireland Succession Duties Agreement
		1956 5	Canada - Denmark Income Tax Agreement
		33	Canada - Germany Income Tax Agreement
		1956-57 17	Canada - South Africa Death Duties Agreement
		18	Canada - South Africa Income Tax Agreement
		1957 16	Canada-Netherlands Income Tax Agreement (amended 1960, c. 18)
		1957-58 27	Canada - Australia Income Tax Convention
		1959 20	Canada - Finland Income Tax Agreement
		1960-61 19	Canada - United States of America Estate Tax Convention
<b>Manpower and Immigration—</b>			
RSC 1952 146	Immigration Aid Societies		
236	Reinstatement in Civil Employment		
325	Immigration		
1955 50	Unemployment Insurance (Sect. 2, Part II)		
1960-61 6	Technical and Vocational Training Assistance		
26	Vocational Rehabilitation of Disabled Persons		
1966 27	Training Allowance		
<b>National Defence—</b>			
RSC 1952 184	National Defence		
283	Visiting Forces (British Commonwealth)		
284	Visiting Forces (North Atlantic Treaty)		
1959 21	Canadian Forces Superannuation		
<b>National Health and Welfare—</b>			
RSC 1952 17	Blind Persons		
29	Canada Shipping (Part V, Sick Mariners and Marine Hospitals)		
74	Department of National Health and Welfare		
109	Family Allowances		
165	Leprosy		
199	Old Age Assistance		
200	Old Age Security		
220	Proprietary or Patent Medicine		
229	Public Works Health		
231	Quarantine		
1952-53 38	Food and Drugs		
1953-54 55	Disabled Persons		
1956 26	Unemployment Assistance		
1957 28	Hospital Insurance and Diagnostic Services		
1958 30	Excise Tax, Sect. 47		
1960-61 35	Narcotic Control		
59	Fitness and Amateur Sport		
1964-65 23	Youth Allowances		
51	Canada Pension Plan		
54	Established Programs (Interim Arrangements)		
1966 42	Health Resources Fund		
45	Canada Assistance Plan		

# List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—continued

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
<b>National Revenue—</b> continued		<b>National Revenue—</b> concluded	
<i>Taxation—</i> concluded		<i>Administered in</i> <i>Part—concluded</i>	
1965 37	Canada - Japan Income Tax Convention	1960-61 35	Narcotic Control
1966 14	Canada-United Kingdom Income Tax Agreement	1965 51	Canada Pension Plan
	43 Public Utilities Income Tax Transfer	<b>Post Office—</b> RSC 1952 212	Post Office
<i>Customs and</i> <i>Excise—</i>		<b>Public Archives—</b> RSC 1952 163	Laurier House
RSC 1952 58	Customs	222	Public Archives
60	Customs Tariff (amended by 316)		
75	Department of National Revenue	<b>Public Works—</b> RSC 1952 91	Dry Docks Subsidies
99	Excise (amended by 319)	114	Ferries
100	Excise Tax (amended by 320)	135	Government Harbours and Piers (Sect. 5)
<i>Administered in</i> <i>Part—</i>		138	Government Works Tolls
RSC 1952 54	United States Treaty (smuggling)	161	Kingsmere Park (in part)
2	Aeronautics (amended by 302)	163	Laurier House
9	Animal Contagious Diseases	187	National Harbours Board (Sect. 38, in part)
11	Atomic Energy Control	193	Navigable Waters Protection (Part I)
22	Canada Dairy Products (amended by 305)	216	Prime Minister's Residence
29	Canada Shipping	225	Public Works
30	Canada Temperance	234	Railway (Sect. 251)
44	Canadian Wheat Board	269	Trans-Canada Highway
55	Copyright	324	Government Property Traffic (in part)
81	Destructive Insect and Pest	1959 46	National Energy Board (Sect. 76)
102	Explosives		
103	Export	<b>Registrar General</b> <b>of Canada—</b>	
113	Feeding Stuffs	1947 24	Trading with the Enemy (Transitional Powers)
114	Ferries	RSC 1952 14	Bankruptcy
115	Fertilizers	18	Boards of Trade
118	Fish Inspection	53	Canada Corporations
119	Fisheries	55	Copyright
126	Fruit, Vegetables and Honey	111	Farmers' Creditors Arrangement
128	Game Export	150	Industrial Design and Union Label
131	Gold Export	203	Patent
135	Government Harbours and Piers	208	Pension Fund Societies
145	Immigration (amended by 325)	265	Timber Marking
147	Importation of Intoxicating Liquors	296	Winding-up (Part I)
155	Inspection and Sale	314	Combines Investigation
167	Live Stock and Live Stock Products	1952-53 49	Trade Marks
168	Live Stock Pedigree	<b>Secretary of State—</b> RSC 1952 30	Canada Temperance
169	Live Stock Shipping	33	Canadian Citizenship (amended 1952-53, c. 23; 1953-54, c. 34; 1956, c. 6; and 1958, c. 24)
172	Maple Products Industry	77	Department of State (amended 1966, c. 25)
177	Meat and Canned Foods	270	Translation Bureau
187	National Harbours Board	1966 25	National Museum
193	Navigable Waters Protection		
194	Northern Pacific Halibut Fishery (Convention)	<b>Solicitor General of</b> <b>Canada—</b>	
209	Pest Control Products	RSC 1952 217	Prisons and Reformatories
212	Post Office	241	Royal Canadian Mounted Police Pension Continuation
215	Precious Metals Marking	1958 38	Parole
220	Proprietary or Patent Medicine	1959 34	Royal Canadian Mounted Police Superannuation
231	Quarantine	54	Royal Canadian Mounted Police Penitentiary
233	Radio	1960-61 53	
248	Seeds		
271	Transport		
292	Weights and Measures		
295	White Phosphorous Matches		
1952-53 15	Coastal Fisheries Protection		
38	Food and Drugs		
1953-54 27	Export and Import Permits		
51	Criminal Code		
1955 27	Canada Agricultural Products Standards		
36	Meat Inspection		
1957 31	Pacific Fur Seals Convention		

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—concluded

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
<b>Trade and Commerce—</b>		<b>Transport—</b>	
RSC 1952 78	Department of Trade and Commerce	RSC 1952 233	Radio
94	Electricity Inspection	234	Railway
103	Export	242	St. Lawrence Seaway Authority
105	Export Credits Insurance	262	Telegraphs
129	Gas Inspection	268	Trans-Canada Air Lines (Air Canada by 1964, c. 2)
191	National Trade Mark and True Labelling	271	Transport (Board of Transport Commissioners)
215	Precious Metals Marking	276	United States Wreckers
257	Statistics	291	Water Carriage of Goods
292	Weights and Measures	311	Canadian National Railways Capital Revision
1953-54 27	Export and Import Permits	1955 15	Foreign Aircraft Third Party Damage
1962 26	Corporations and Labour Unions Returns	29	Canadian National Railways
1962-63 12	Canadian Corporation for the 1967 World Exhibition	31	Canadian National Refunding
		1957 38	Windsor Harbour Commissioners
<b>Transport—</b>		1959 27	Freight Rates Reduction Act
-	Auditors for National Railways (Annual)	1960 21	Oshawa Harbour Commissioners
	Canadian National Railways Financing and Guarantee (Annual)	26	Canadian National Toronto Terminals
1907 22	Intercolonial Railway and Prince Edward Island Railway Employees Provident Fund	1962 10	Atlantic Development Board
1908 46	Meaford Harbour	1963 39	Ontario Harbours Agreement
1911 26	Toronto Harbour Commissioners	1964 6	Blue Water Bridge Authority
1912 55	Winnipeg and St. Boniface Harbour Commissioners	32	Harbour Commissions
		<b>Veterans Affairs—</b>	
1913 162	North Fraser Harbour Commissioners	1920 54	Returned Soldiers' Insurance (as amended)
1922 50	Trenton Harbour	RSC 1927 188	Soldier Settlement (as amended)
1927 29	Canadian National (West Indies) Steamship Company	RSC 1952 8	Allied Veterans Benefits
1929 12	Canadian National Montreal Terminals	51, 312	Civilian War Pensions and Allowances (amended 1962, c. 11) (Sects. I to X, Canadian Pension Commission); (Sect. XI, War Veterans Allowance Board)
48	Northern Alberta Railways	80	Department of Veterans Affairs
1931 19, 20	Beauharnois Light, Heat and Power	117	Fire Fighters War Service Benefits
1940 20	Beauharnois Light, Heat and Power	207, 332	Pension (amended 1953-54, c. 62; 1957-58, c. 19; 1960-61, c. 10; 1964-65, c. 34) (Canadian Pension Commission)
1947 26	Beauharnois Light, Heat and Power	256	Special Operators War Service Benefits
42	Port Alberni Harbour Commissioners	258	Supervisors War Service Benefits
RSC 1952 34	Belleville Harbour Commissioners	279, 338	Veterans Insurance (amended 1958, c. 43; 1962, c. 6)
RSC 1952 2, 302	Aeronautics	280	Veterans' Land (amended 1953-54, c. 66; 1959, c. 37; 1962, c. 29; 1965, c. 19)
16	Bills of Lading	281	Veterans Rehabilitation (amended 1959, c. 17)
20	Bridges	289	War Service Grants (amended 1953-54, c. 46; 1959, c. 18; 1962, c. 7)
29	Canada Shipping	297	Women's Royal Naval Services and the South African Military Nursing Service (Benefits)
38	Canadian Maritime Commission	340	War Veterans Allowance (amended 1955, c. 13; 1957-58, c. 7; 1960, c. 36; 1960-61, c. 39; 1964-65, c. 34; 1965, c. 20) (War Veterans Allowance Board)
39	Canadian National - Canadian Pacific	1952-53 27	Children of War Dead (Education Assistance) (amended 1953-54, c. 2; 1958, c. 25; 1962, c. 10; 1965, c. 15)
42	Canadian Overseas Telecommunication Corporation	1953-54 65	Veterans Benefit (amended 1955, c. 43)
43	Canadian Vessel Construction Assistance		
45	Carriage by Air		
79	Department of Transport		
135	Government Harbours and Piers		
136	Government Railways		
137	Government Vessels Discipline		
157	International Rapids Power Development		
169	Live Stock Shipping		
174	Maritime Freight Rates		
187	National Harbours Board		
193	Navigable Waters Protection		
202	Passenger Tickets		



## PART IV.—FEDERAL AND PROVINCIAL GOVERNMENT EMPLOYMENT

### Federal Government Employment

Most public service employment and related personnel functions have been the responsibility of the Civil Service Commission, an independent body responsible to Parliament; the Treasury Board has had the duty of approving rates of pay and conditions of employment. The Civil Service Commission was established in 1908 and the legislation under which it first operated was superseded by a new Act in 1918 and that in turn was replaced in 1962. The operations of the Commission under the 1962 legislation with respect to recruitment, promotion, position classification, salary determination, staff training and employee relations are described in the 1966 Year Book at pp. 143-144. However, at the time of writing (November 1966) there were before Parliament three Bills that would change this framework. The proposed legislation would:

reaffirm the (Public Service) Commission's guardianship of the merit system and provide for its extension to certain groups of employees previously exempt from the provisions of the Civil Service Act; permit further geographic decentralization of Commission operations and further delegation of its staffing authority for manpower needs of departments of government that are decentralizing their operations; establish the Treasury Board (see p. 141) as the central managerial authority for personnel policy (except for those aspects assigned to the Commission by law), for classification and pay, and for conditions of employment; and introduce a system of collective bargaining (administered by a special staff relations board) for pay and conditions of employment based on a new simplified classification system.

If passed before the end of the year, this legislation will be described briefly in Part IV of Chapter XXVII.

**Statistics of Federal Government Employment.\***—The current monthly survey of Federal Government employment, started in 1952, covers all employees of the Government of Canada; employees in this sense exclude the Governor General and Lieutenant-Governors, Ministers of the Crown and Members of Parliament, judges, persons under contract and members of the Armed Forces, but include Force members of the Royal Canadian Mounted Police. The survey is divided into two main categories: (1) departmental branches, services and corporations, and (2) agency and proprietary corporations and other agencies. Table 1 combines the two groups; Tables 2 to 5 cover employees in the first category and Table 6 covers employees in the second category.

\* Prepared in the Governments Division, Financial Statistics Branch, Dominion Bureau of Statistics.

**1.—Total Federal Government Employees, by Province, as at Mar. 31, 1965, and Payrolls for the Year Ended Mar. 31, 1965**

Item and Province or Territory	Departments	Departmental Corporations	Agency Corporations	Proprietary Corporations	Other Agencies	Total
	No.	No.	No.	No.	No.	No.
<b>Employees—</b>						
Newfoundland.....	3,691	212	—	6,611	12	10,526
Prince Edward Island.....	1,209	50	—	914	—	2,173
Nova Scotia.....	12,869	387	339	5,068	48	18,711
New Brunswick.....	6,355	580	102	7,183	37	14,257
Quebec.....	29,822	2,990	2,796	30,171	826	66,605
Ontario.....	82,603	7,413	4,573	33,550	1,092	129,231
Manitoba.....	9,450	627	54	13,526	583	24,240
Saskatchewan.....	6,050	399	45	4,145	48	10,687
Alberta.....	12,121	552	50	6,542	94	19,359
British Columbia.....	19,168	1,136	199	6,066	85	26,654
Yukon and Northwest Territories.....	2,603	7	205 <sup>1</sup>	25 <sup>1</sup>	—	2,840
Abroad.....	3,210	15	5	8,695	8	11,933
<b>Totals, Employees.....</b>	<b>189,151</b>	<b>14,368</b>	<b>8,368</b>	<b>122,496</b>	<b>2,833</b>	<b>337,216</b>
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Totals, Payrolls.....</b>	<b>897,099</b>	<b>70,535</b>	<b>48,318</b>	<b>688,281</b>	<b>14,996</b>	<b>1,719,228</b>

<sup>1</sup> In addition, approximately 220 agency and proprietary corporation and other agency employees are included with those of other provinces.

*Departmental Branches, Services and Corporations.*—The salaries of employees in this group are paid from the Consolidated Revenue Fund. Definitions of classifications are as follows. "Salaried" employees include all persons paid on the basis of an annual salary rate with the exception of ships' officers who, though paid an annual salary rate, are subject to special treatment under the regulations made pertaining to the Financial Administration Act. The salaried staff are employed in departmental branches, services and corporations which are subject to regulation by the Treasury Board and for which the positions are outlined in the *Estimates of Canada*, or are established by means of supplementary Treasury Board Minutes. Thus, this category of employees includes persons subject to the provisions of the Civil Service Act plus salaried persons employed on the staffs of Cabinet Ministers and appointed by statute or by Order in Council, and also the salaried staffs of certain administrative branches of the Government that do not fall under the jurisdiction of the Civil Service Act.

"Prevailing Rate" employees are those who occupy continuing positions that are subject to prevailing rate regulations and are therefore paid on the basis of standard wage rates for similar work in the area in which the individual is employed. Regulations made under authority of the Financial Administration Act govern the third group entitled "Ships' Officers and Crews".

These three groups comprise what may be called the "regular" employees of the government service. "Casuals and Others" are principally persons employed on a non-continuing basis.

## 2.—Employees in Departmental Branches, Services and Corporations of the Federal Government, by Province and Sex, as at Mar. 31, 1965

Province or Territory		Salaried	Pre- valing Rate <sup>1</sup>	Ships' Officers and Crews	Total <sup>1</sup>	Casuals and Others <sup>1</sup>
		No.	No.	No.	No.	No.
Newfoundland.....	T.	2,793	401	258	3,452	451
	M.	2,484	324	258	3,066	271
	F.	309	64	—	373	31
Prince Edward Island.....	T.	767	208	103	1,078	181
	M.	646	135	103	884	174
	F.	121	24	—	145	7
Nova Scotia.....	T.	8,066	2,457	1,194	11,717	1,539
	M.	6,220	2,072	1,194	9,492	1,244
	F.	1,840	255	—	2,095	71
New Brunswick.....	T.	5,385	868	144	6,397	538
	M.	4,301	669	144	5,114	305
	F.	1,084	171	—	1,255	116
Quebec.....	T.	26,563	3,636	659	30,858	1,954
	M.	20,942	2,861	659	24,462	1,377
	F.	5,621	721	—	6,342	574
Ontario.....	T.	77,783	6,306	208	84,297	5,719
	M.	64,109	4,144	205	68,458	2,350
	F.	23,674	2,131	3	25,808	3,367
Manitoba.....	T.	8,035	1,376	14	9,425	652
	M.	6,041	912	14	6,967	415
	F.	1,994	368	—	2,362	235
Saskatchewan.....	T.	5,516	526	—	6,042	407
	M.	4,503	368	—	4,871	259
	F.	1,013	116	—	1,129	147
Alberta.....	T.	9,883	1,794	9	11,686	987
	M.	7,446	1,048	9	8,503	424
	F.	2,437	337	—	2,774	266
British Columbia.....	T.	15,201	2,352	855	18,408	1,896
	M.	11,432	1,681	855	14,018	1,693
	F.	3,719	553	—	4,277	148
Yukon and Northwest Territories.....	T.	1,526	729	20	2,275	335
	M.	1,134	392	20	1,546	128
	F.	392	79	—	471	43
Abroad.....	T.	3,036	—	—	3,036	189
	M.	1,639	—	—	1,639	107
	F.	1,347	—	—	1,347	82
Canada.....	T.	164,554	20,653	3,464	188,671	14,848
	M.	121,003	14,606	3,461	139,070	8,747
	F.	43,551	4,824	3	48,378	5,086

<sup>1</sup> In certain provinces totals include employees undistributed as to sex.

### 3.—Employees in Departmental Branches, Services and Corporations and Payrolls by Month, April 1964 to March 1965

Note.—Excludes agency and proprietary corporations and other agencies, figures for which are given in Table 6.

Month	Salaried	Prevailing Rate	Ships' Officers and Crews	Total	Casuals and Others
EMPLOYEES AT END OF EACH MONTH					
	No.	No.	No.	No.	No.
April 1964.....	165,251	21,866	3,397	190,514	12,368
May.....	164,988	22,528	3,519	191,035	13,632
June.....	164,170	23,874	3,562	191,606	15,043
July.....	164,436	24,726	3,547	192,709	16,594
August.....	164,588	23,812	3,546	191,946	16,088
September.....	163,490	21,856	3,520	188,866	14,193
October.....	164,536	21,402	3,723	189,661	13,168
November.....	165,150	21,294	3,673	190,117	13,270
December.....	164,378	21,206	3,524	189,108	13,035
January 1965.....	164,993	20,881	3,442	189,316	13,642
February.....	164,735	20,677	3,427	188,839	13,868
March.....	164,554	20,653	3,464	188,671	14,848
REGULAR PAYROLLS					
	\$'000	\$'000	\$'000	\$'000	\$'000
April 1964.....	65,334	6,742	1,444	73,520	3,365
May.....	65,294	6,877	1,180	73,350	3,628
June.....	65,064	7,287	1,218	73,570	4,216
July.....	65,285	7,845	1,213	74,343	4,802
August.....	65,448	7,338	1,233	74,019	4,562
September.....	66,571	6,870	1,209	74,651	4,203
October.....	66,665	6,841	1,267	74,773	3,910
November.....	66,882	6,504	1,254	74,641	3,560
December.....	66,550	6,968	1,221	74,739	3,738
January 1965.....	67,176	6,552	1,174	74,902	3,518
February.....	67,025	6,209	1,176	74,411	3,520
March.....	67,297	6,889	1,428	75,614	4,215
OVERTIME PAYMENTS REPORTED					
	\$'000	\$'000	\$'000	\$'000	\$'000
April 1964.....	1,663	259	239	2,161	20
May.....	527	226	125	878	57
June.....	761	295	137	1,193	77
July.....	617	299	143	1,059	122
August.....	584	321	148	1,053	130
September.....	345	245	203	792	119
October.....	932	270	204	1,405	92
November.....	764	281	224	1,269	59
December.....	1,488	288	158	1,935	37
January 1965.....	993	346	109	1,448	32
February.....	1,659	275	94	2,027	30
March.....	428	266	129	824	36
RETROACTIVE PAYMENTS REPORTED					
	\$'000	\$'000	\$'000	\$'000	\$'000
April 1964.....	192	14	281	487	29
May.....	3	20	6	29	17
June.....	7	20	2	30	3
July.....	13	21	27	61	2
August.....	—	6	1	7	2
September.....	9,605 <sup>1</sup>	38	2	9,645	110
October.....	1	20	4	26	11
November.....	4	29	28	62	7
December.....	166	52	1	219	18
January 1965.....	—	76	1	77	9
February.....	—	19	32	51	9
March.....	3	51	33	87	17

<sup>1</sup> Includes some payments retroactive to Oct. 1, 1963 and others to Jan. 1, 1964.

Table 4 presents metropolitan area data on staff employed in departmental branches, services and corporations. The 17 metropolitan areas listed are those defined for purposes



of the 1961 Census of population, with subsequent amendments (annexations, etc.) considered. Included are employees who work within the boundaries of the metropolitan areas; employees residing within those areas but working outside are excluded.

**4.—Federal Employees in Metropolitan Areas with Totals for Non-metropolitan Areas, by Sex, as at Sept. 30, 1965 and Payrolls for September 1965**

Area	Persons Employed as at Sept. 30, 1965					Regular Payrolls September 1965	
	Male	Female	Undis-tributed	Total	P.C. of Grand Total	Total	P.C. of Grand Total
	No.	No.	No.	No.		\$'000	
<b>Metropolitan Areas</b> .....	<b>98,872</b>	<b>41,328</b>	<b>100</b>	<b>140,300</b>	<b>66.5</b>	<b>58,695</b>	<b>68.4</b>
Ottawa, Ont.—Hull, Que.....	31,941	18,329	3	50,273	23.8	23,259	27.1
Toronto, Ont.....	15,439	4,551	—	19,990	9.6	7,748	9.0
Halifax, N.S.....	11,803	4,878	—	16,681	7.9	6,430	7.5
Vancouver, B.C.....	7,634	1,800	66	9,500	4.5	3,655	4.3
Winnipeg, Man.....	6,605	2,377	1	8,983	4.3	3,749	4.4
Edmonton, Alta.....	4,631	1,958	—	6,589	3.1	2,650	3.1
Victoria, B.C.....	3,582	1,627	—	5,209	2.5	2,062	2.4
London, Ont.....	4,007	1,136	2	5,145	2.4	2,132	2.5
Quebec, Que.....	2,623	1,276	—	3,899	1.8	1,444	1.7
Calgary, Alta.....	2,729	933	1	3,663	1.7	1,404	1.6
St. John's, Nfld.....	2,151	808	5	2,964	1.4	1,187	1.4
Saint John, N.B.....	1,677	249	20	1,946	0.9	747	0.9
Windsor, Ont.....	1,154	517	—	1,671	0.8	647	0.8
Kitchener-Waterloo, Ont.....	1,149	412	—	1,561	0.7	642	0.7
Sudbury, Ont.....	991	229	—	1,220	0.6	507	0.6
	529	133	2	664	0.3	283	0.3
	227	115	—	342	0.2	147	0.2
<b>Non-metropolitan Areas</b> .....	<b>55,660</b>	<b>12,015</b>	<b>3,102</b>	<b>70,777</b>	<b>33.5</b>	<b>27,040</b>	<b>31.6</b>
In Canada.....	53,750	10,513	3,102	67,365	31.9	25,704	30.0
Outside Canada.....	1,910	1,502	—	3,412	1.6	1,336	1.6
<b>Grand Totals</b> .....	<b>154,532</b>	<b>53,343</b>	<b>3,202</b>	<b>211,077</b>	<b>100.0</b>	<b>85,735</b>	<b>100.0</b>
	p.c.	p.c.	p.c.	p.c.		p.c.	
Proportion in—							
Metropolitan areas.....	64.0	77.5	3.1	66.5	...	68.4	...
Non-metropolitan areas.....	36.0	22.5	96.9	33.5	...	31.6	...
In Canada.....	34.8	19.7	96.9	31.9	...	30.0	...
Outside Canada.....	1.2	2.8	—	1.6	...	1.6	...

Table 5 presents statistics for departmental branches, services and corporations on the basis of a classification by function. The purpose of such classification is to supply a means of studying the operation of government without the complication that results from differences in administrative establishment. This analysis is useful in three ways. First, it permits a detailed study of employment by the Government of Canada according to the main purposes or functions and, since these functions are not subject to the periodic changes that alter the administrative structure of the Government, it is possible to develop a statistical series which, with minor exceptions, is consistent over an extended period of time. Secondly, since differences in administrative establishment are eliminated, it is possible to make meaningful comparisons between Federal Government expenditures on employment and similar expenditures by other levels of government. Thirdly an analysis of the relationship between expenditures on employment and total expenditures may be made with regard to each function.

This Section normally includes a table giving employee and payroll data classified by departmental branches, services and corporations as they were organized at the end of the latest fiscal year. Data as at the end of March 1964 are given in the 1966 Year Book at pp. 152-155. However, because of the extensive changes taking place in the organization of a number of departments during 1965-66, this classification is not included in the current edition; monthly figures on both the functional and departmental bases are available in DBS publication *Federal Government Employment* (Cat. No. 72-004).

## 5.—Federal Government Employees as at Mar. 31, 1965 and Regular Payrolls for the Year Ended Mar. 31, 1965, classified by Function

Note.—Excludes agency and proprietary corporations and other agencies, figures for which are given in summary form in Table 6.

Function	Salaried			Prevailing Rate			Ships' Officers and Crews			Totals			Casuals and Others		
	Em- ployees	Regular Payrolls	No.	Em- ployees	Regular Payrolls	No.	Em- ployees	Regular Payrolls	No.	Em- ployees	Regular Payrolls	No.	Em- ployees	Regular Payrolls	No.
	No.	\$		No.	\$		No.	\$		No.	\$		No.	\$	
Defence Services (excl. Armed Forces).....	30,040	134,210,116	11,313	46,094,657	567	—	—	—	—	41,920	182,696,769	4,650	—	20,431,269	—
Veterans Pensions and Other Benefits.....	10,889	47,686,355	1,995	5,425,462	—	—	—	—	—	12,884	53,111,817	—	—	—	—
General Government.....	28,823	141,819,724	2,758	9,985,456	9	—	—	—	—	31,590	151,837,512	2,645	—	2,215,441	—
Executive and administrative.....	25,548	126,894,169	2,753	9,979,089	9	—	—	—	—	28,310	136,905,620	2,539	—	1,989,889	—
Legislative.....	1,121	4,499,115	5	6,367	—	—	—	—	—	1,126	4,505,482	—	—	24,906	—
Research, planning and statistics.....	2,154	10,426,440	—	—	—	—	—	—	—	2,154	10,426,440	—	—	200,636	—
Protection of Persons and Property.....	13,263	66,323,908	111	370,282	—	—	—	—	—	13,374	66,694,190	17	—	86,198	—
Law enforcement.....	8,018	14,465,536	—	—	—	—	—	—	—	8,018	14,465,536	—	—	40,023	—
Corrections.....	8,766	43,034,674	111	370,282	—	—	—	—	—	8,877	43,424,956	—	—	—	—
Police protection.....	1,248	7,372,437	—	—	—	—	—	—	—	1,248	7,372,437	7	—	46,175	—
Other.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Transportation and Communications.....	10,303	55,602,185	1,445	7,380,080	2,475	—	—	—	—	14,223	73,625,316	1,182	—	6,947,418	—
Airways.....	5,823	22,306,002	322	3,159,740	—	—	—	—	—	4,545	25,465,742	418	—	2,183,172	—
Highways, roads and bridges.....	454	2,380,176	727	2,421,062	—	—	—	—	—	801	4,771,238	99	—	1,364,652	—
Railways.....	163	1,193,098	—	—	—	—	—	—	—	163	1,193,098	—	—	—	—
Telephone, telegraph and wireless.....	2,899	13,941,570	21	82,195	—	—	—	—	—	2,920	14,023,765	46	—	343,946	—
Waterways.....	2,678	12,896,247	355	1,717,093	—	—	—	—	—	5,508	25,256,381	619	—	3,055,648	—
Other.....	586	2,915,092	—	—	—	—	—	—	—	586	2,915,092	—	—	—	—
Health.....	3,437	17,290,324	502	1,015,682	—	—	—	—	—	3,939	18,306,006	293	—	996,269	—
General.....	412	2,165,528	4	59,017	—	—	—	—	—	416	2,224,545	4	—	25,343	—
Public health.....	578	5,098,345	50	125,771	—	—	—	—	—	928	5,194,116	4	—	58,631	—
Hospital care.....	2,147	10,056,451	448	830,894	—	—	—	—	—	2,565	10,887,345	285	—	912,295	—
Social Welfare.....	11,327	52,613,941	13	48,801	—	—	—	—	—	11,343	52,684,171	2,033	—	3,352,791	—
Aid to aged persons.....	31	194,351	—	—	—	—	—	—	—	31	194,351	—	—	736	—
Family allowances.....	722	2,700,600	—	—	—	—	—	—	—	722	2,700,600	41	—	112,288	—
Labour.....	449	2,448,445	—	—	—	—	—	—	—	449	2,448,445	30	—	78,926	—
National employment and unemployment insurance services.....	9,061	41,714,124	4	12,249	—	—	—	—	—	9,065	41,726,373	1,184	—	2,789,374	—
Other social welfare.....	1,064	5,556,421	9	36,552	—	—	—	—	—	1,078	5,614,402	778	—	371,467	—
Recreation and Cultural Services.....	1,843	10,179,836	925	4,968,440	—	—	—	—	—	2,768	15,148,276	999	—	2,629,514	—
Archives, art galleries, museums and libraries.....	420	2,011,878	11	42,921	—	—	—	—	—	431	2,054,799	30	—	88,056	—

Parks, beaches and other recreation areas.....	644	3,322,495	914	4,925,519	—	—	1,553	8,249,014	834	2,191,503
Physical culture.....	11	63,801	—	—	—	—	11	63,801	—	—
Other.....	768	4,780,862	—	—	—	—	768	4,780,862	135	349,950
<b>Education.....</b>	<b>1,586</b>	<b>9,118,253</b>	<b>21</b>	<b>42,794</b>	—	—	<b>1,607</b>	<b>9,160,977</b>	<b>474</b>	<b>341,061</b>
Indian and Eskimo schools and schools in N.W.T.	1,583	8,893,604	21	42,794	—	—	1,554	8,846,328	474	341,061
Universities, colleges and other schools.....	33	314,649	—	—	—	—	53	314,649	—	—
<b>Natural Resources and Primary Industries.....</b>	<b>13,612</b>	<b>77,975,116</b>	<b>1,464</b>	<b>7,145,671</b>	408	1,929,088	<b>15,484</b>	<b>87,049,875</b>	<b>532</b>	<b>3,692,195</b>
Fish and game.....	1,776	10,090,940	25	241,974	408	1,929,088	2,209	12,267,708	75	902,581
Forests.....	7,988	43,633,224	58	337,965	—	—	1,048	6,356,189	74	268,676
Lands, settlement and agriculture.....	1,358	8,023,754	1,004	4,586,037	—	—	8,962	48,209,791	156	1,075,949
Minerals and mines.....	1,236	8,783,347	6	333,924	—	—	1,302	9,117,271	39	327,287
Water resources.....	1,245	8,383,075	5	11,822	—	—	250	1,394,897	9	41,797
Other.....	1,407	8,070,070	306	1,633,949	—	—	1,713	9,704,019	179	1,075,905
<b>Trade and Industrial Development.....</b>	<b>1,725</b>	<b>9,640,307</b>	—	—	—	—	<b>1,725</b>	<b>9,640,307</b>	<b>119</b>	<b>507,050</b>
<b>Public Service and Trading Enterprises.....</b>	<b>139</b>	<b>609,080</b>	—	—	—	—	<b>139</b>	<b>609,080</b>	<b>71</b>	<b>171,232</b>
<b>Other.....</b>	<b>37,567</b>	<b>171,522,304</b>	<b>105</b>	<b>440,917</b>	—	—	<b>37,672</b>	<b>171,963,221</b>	<b>1,830</b>	<b>5,850,910</b>
Civil defence.....	228	1,870,937	32	88,627	—	—	258	1,459,564	—	704
International co-operation and assistance.....	160	893,131	—	—	—	—	160	893,131	6	11,157
Immigration and citizenship.....	2,019	9,611,991	—	82,124	—	—	2,047	9,694,115	38	48,014
Internal affairs.....	2,303	10,907,325	—	—	—	—	2,303	10,907,325	250	302,141
Buildings and commissariat.....	322	1,411,823	—	—	—	—	322	1,411,823	—	—
Post Office.....	27,546	116,930,931	24	166,346	—	—	27,570	117,037,277	913 <sup>2</sup>	1,766,415 <sup>2</sup>
Other.....	4,991	30,590,166	21	103,820	—	—	5,012	30,499,986	623	3,722,479 <sup>2</sup>
<b>Grand Totals.....</b>	<b>164,554<sup>1</sup></b>	<b>794,591,449<sup>4</sup></b>	<b>20,653<sup>3</sup></b>	<b>82,922,411<sup>5</sup></b>	<b>3,464<sup>6</sup></b>	<b>15,017,916<sup>5</sup></b>	<b>188,671</b>	<b>892,531,776</b>	<b>14,848<sup>2</sup></b>	<b>47,236,794<sup>2</sup></b>

<sup>1</sup> Excludes 10,743 postmasters and an estimated 3,300 assistants paid \$29,726,225 from postal revenues.

<sup>2</sup> Excludes \$2,248 Christmas helpers paid \$3,390,170.

<sup>3</sup> Excludes part-time weather observers paid \$56,817.

<sup>4</sup> Excludes the Governor General and 10 Lieutenant-Governors paid \$230,664; 364 judges paid \$7,122,564; and 24 Ministers of the Crown paid \$390,084.

<sup>5</sup> Excludes field parties (55 prevailing rate staff paid \$578,044 and 80 ships' employees paid \$512,800) of the (Department of Mines and Technical Surveys. Field parties on the East Coast are included above. To avoid revealing particulars relating to individuals, payments of \$4,229 to prevailing rate employees and \$15,446 to casual employees are excluded from the function detail but are included here.



*Agency and Proprietary Corporations and Other Agencies.*—The following are organizations owned by the Federal Government as at Mar. 31, 1965. Employees and earnings are shown by month in Table 6; a provincial distribution of employees and a summary of the total payroll in each of the three groups is given in Table 1, p. 156.

Agency Corporations

Atomic Energy of Canada Limited  
Canadian Arsenal Limited  
Canadian Commercial Corporation  
Canadian Patents and Development Limited\*  
Centennial Commission  
Crown Assets Disposal Corporation

Defence Construction (1951) Limited  
National Battlefields Commission  
National Capital Commission  
National Harbours Board  
Northern Canada Power Commission

Proprietary Corporations

Air Canada  
Canadian Broadcasting Corporation  
Canadian National Railways  
Canadian Overseas Telecommunication Corporation  
Central Mortgage and Housing Corporation  
Eldorado Aviation Limited  
Eldorado Mining and Refining Limited

Export Credits Insurance Corporation  
Farm Credit Corporation  
Northern Transportation Company Limited  
Polymer Corporation Limited  
St. Lawrence Seaway Authority  
The Seaway International Bridge Corporation Limited

Other Agencies

Atlantic Development Board  
Bank of Canada  
Canadian Wheat Board

Industrial Development Bank  
Canadian Corporation for the 1967 World Exhibition  
Office of the Custodian

**6.—Employees and Earnings in Agency and Proprietary Corporations and Other Agencies by Month, Years Ended Mar. 31, 1964 and 1965**

Month	1963-64		1964-65	
	Employees	Earnings	Employees	Earnings
	No.	\$'000	No.	\$'000
April.....	131,137	55,476	132,670	58,185
May.....	135,155	57,998	135,686	59,808
June.....	138,463	56,861	140,226	63,427
July.....	141,611	63,160	143,717	64,629
August.....	141,921	60,081	144,232	63,675
September.....	139,550	58,276	143,455	68,589
October.....	135,991	59,669	138,281	62,906
November.....	134,608	56,859	136,336	62,602
December.....	132,020	60,179	135,800	63,839
January.....	130,974	57,218	133,842	61,740
February.....	130,755	55,064	133,841	59,248
March.....	130,760	57,885	133,697	62,946

**Provincial Government Employment**

Table 7 shows gross payrolls (including retroactive pay, salary, adjustments and overtime payments) of provincial government employees, exclusive of those for British Columbia, for the month of March 1966. Provincial government payrolls for the whole of the year ended Mar. 31, 1966 amounted to \$1,210,255,000, payrolls for departmental services employees amounted to \$723,432,000 and accounted for 59.8 p.c. of the total, those of institutions of higher education received \$134,571,000 or 11.1 p.c., those of provincial government enterprises \$336,297,000 or 27.8 p.c., and those of workmen's compensation boards \$15,955,000 or 1.3 p.c. of the total.

The only data available for British Columbia and included in the table are for employees of institutions of higher education.

\* Staffed by employees of the National Research Council.

**7.—Provincial Government Employment and Payrolls, for March 1966**

Province or Territory and Item	Departmental Services	Provincial Institutions of Higher Education	Provincial Government Enterprises	Workmen's Compensation Boards	Total
Newfoundland—					
Employees.....No.	8,260	329	358	52	8,999
Gross payrolls.....\$	2,343,552	163,968	121,172	17,821	2,646,513
Prince Edward Island—					
Employees.....No.	1,648	—	60	8	1,716
Gross payrolls.....\$	378,056	—	15,089	2,928	396,073
Nova Scotia—					
Employees.....No.	10,710	—	1,444	73	12,227
Gross payrolls.....\$	2,597,008	—	487,646	28,690	3,113,344
New Brunswick—					
Employees.....No.	7,171	893	2,309	60	10,433
Gross payrolls.....\$	2,332,299	306,388	891,885	24,433	2,555,005
Quebec—					
Employees.....No.	42,721	—	14,356	1,195	58,272
Gross payrolls.....\$	14,467,220	—	6,047,297	368,698	20,883,215
Ontario—					
Employees.....No.	55,814	8,917	19,470	1,418	85,619
Gross payrolls.....\$	23,192,778	3,759,258	10,237,688	624,071	37,813,795
Manitoba—					
Employees.....No.	8,847	3,690	6,787	115	19,439
Gross payrolls.....\$	3,265,039	1,094,755	3,144,975	43,345	7,548,114
Saskatchewan—					
Employees.....No.	9,595	3,881	6,656	113	20,245
Gross payrolls.....\$	4,308,347	1,648,895	2,860,665	49,870	8,867,777
Alberta—					
Employees.....No.	17,956	7,768	7,884	438	34,046
Gross payrolls.....\$	7,112,947	2,766,159	2,878,272	180,232	12,937,610
British Columbia—					
Employees.....No.	..	5,584	..	..	5,584
Gross payrolls.....\$	..	2,161,172	..	..	2,161,172
Yukon and Northwest Territories— <sup>1</sup>					
Employees.....No.	537	—	58	—	595
Gross payrolls.....\$	253,430	—	20,298	—	273,728
<b>All Provinces and Territories—</b>					
Employees.....No.	163,259	31,062	59,352	3,472	257,175
Gross payrolls.....\$	60,250,676	11,900,595	26,704,987	1,340,088	100,196,346

<sup>1</sup> Departmental services of the Northwest Territories are staffed by employees of the Government of Canada who are included in the statistics under "Federal Government Employment".

**PART V.—CANADA'S EXTERNAL RELATIONS\***

**Canada's Status in the Commonwealth.**—The Imperial Conference held in London in 1926 marked a turning point in the history of the then British Empire and was an important step in the evolution from Empire to Commonwealth. At the 1926 Conference the self-governing countries, consisting of Britain and the Dominions, were described as being "autonomous countries within the British Empire, equal in status, in no way subordinate one to another in any aspect of their domestic or external affairs, though united by a common allegiance to the Crown, and freely associated as members of the British Commonwealth of Nations". The Governors General of the Dominions were recognized as having in all essential respects the same constitutional position as the Crown in Britain. It was also stated by the Conference that "it is the right of the Government

\* Prepared (June 1966) by the Department of External Affairs.

of each Dominion to advise the Crown in all matters relating to its own affairs". Subsequent to this important meeting, Canada's stature and status in the international community continued to grow. Following from the earlier (1923) Imperial Conference, Canada exercised the powers of treaty-making and had established its own diplomatic missions overseas. The Statute of Westminster in 1931 provided more explicit recognition of the principles of equality of status by removing the remaining limitations on the legislative autonomy of Commonwealth countries. As a further development of Canada's independent position, all legal cases started in Canada after Dec. 23, 1949 could no longer be appealed to the Privy Council in London and the Supreme Court of Canada became the final court of appeal for all Canadian legal cases.

**Canada's International Status.**—The growth of Canada's international status is reflected in the development of the Department of External Affairs. A review of the organization and development of that Department is given in the 1952-53 Year Book, pp. 101-104; a brief outline is given at pp. 132-133 of this volume.

The following Section 1 covers Canadian diplomatic representation abroad and representation of other countries in Canada. Section 2 deals with Canada's main international activities during 1965 and early 1966 with respect specifically to the Commonwealth, the United Nations, and the North Atlantic Treaty Organization. International economic aid programs and Canada's participation in the Organization for Economic Co-operation and Development are covered separately. Although these fields are considered to be the most significant for the purposes of this publication, it should be noted that Canada's activities in other areas are also of importance. The *External Affairs Monthly Bulletin*\* covers all activities of the Department.

\* Obtainable from the Queen's Printer, Ottawa, \$2 per year.

## Section 1.—Diplomatic Representation as at June 30, 1966

NOTE.—Changes in this listing subsequent to June 30, 1966 and names of current representatives are given in *Canadian Representatives Abroad and Representatives of Other Countries in Canada*, published thrice yearly and obtainable from the Queen's Printer, Ottawa, price 60 cents per copy.

### 1.—Canadian Representation Abroad

Country and Year Representation Established	Present Status of Representative	Address
Algeria.....1965	*Ambassador.....	c/o Canadian Embassy, Proliterskih Brigada 69, Belgrade, Yugoslavia
Argentina.....1941	Ambassador.....	Bartolomé Mitre 478, Buenos Aires
Australia.....1939	High Commissioner.....	Commonwealth Ave., Canberra
Austria.....1952	Ambassador.....	49-51 Obere Donaustrasse, Vienna
Belgium.....1939	Ambassador.....	35, rue de la Science, Brussels
Bolivia.....1961	*Ambassador.....	c/o Canadian Embassy, Edificio El Pacifico- Washington, 7 Piso, Plaza Washington, Lima, Peru
Brazil.....1941	Ambassador.....	Avenida Presidente Wilson 165, Rio de Janeiro
Britain.....1880	High Commissioner.....	Canada House, Trafalgar Square, London S.W.1
Burma.....1958	*Ambassador.....	c/o Office of the High Commissioner for Canada, Ampang Rd., Kuala Lumpur, Malaysia
Cameroon.....1962	Ambassador.....	Immeuble Soppo Priso, rue Joseph Clerc, Yaounde
Central African Republic ....1962	*Ambassador.....	Immeuble Soppo Priso, rue Joseph Clerc, Yaounde, Cameroon
Ceylon.....1953	High Commissioner.....	6 Gregory's Road, Cinnamon Gardens, Colombo
Chad.....1962	*Ambassador.....	Immeuble Soppo Priso, rue Joseph Clerc, Yaounde, Cameroon
Chile.....1942	Ambassador.....	Agustinas 1225, Santiago
Colombia.....1953	Ambassador.....	Carrera 10, 16-92, Bogota

\* Dual accreditation; representative not resident in the country.



## 1.—Canadian Representation Abroad—continued

Country and Year Representation Established	Present Status of Representative	Address
Congo (Brazzaville).....1962	*Ambassador.....	Immeuble Soppo Priso, rue Joseph Clerc, Yaounde, Cameroon
Congo (Leopoldville).....1962	Ambassador.....	Building C.C.C.I., Boulevard du 30 juin, Leopoldville
Costa Rica.....1961	Ambassador.....	Edificio Banco Anglo Costarricense, Ave- nida 2y Calle 3, San José
Cuba.....1945	Ambassador.....	Calle 30, No. 518, Esquina a7a, Miramar, Havana
Cyprus.....1961	High Commissioner.....	15A Heroes St., Nicosia
Czechoslovakia.....1943	Ambassador.....	Mickiewiczova 6, Prague 6
Dahomey.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, New Barclays Bank Bldg., 40 Marina Dr., Lagos, Nigeria
Denmark.....1946	Ambassador.....	Prinsesse Maries Allé 2, Copenhagen
Dominican Republic.....1954	Ambassador.....	Edificio Copello, 79 Calle El Conde, Santo Domingo
Ecuador.....1961	Ambassador.....	Edificio I.C.S.A., 120 Diagonal Seminario Menor y Avenida 10 de Agosto, Quito
El Salvador.....1962	*Ambassador.....	c/o Canadian Embassy, Edificio Banco Anglo Costarricense, Avenida 2y Calle 3, San José, Costa Rica
Ethiopia.....1966	Ambassador.....	c/o Canadian Embassy, P.O. Box 1130, Addis Ababa, Ethiopia
Finland.....1949	Ambassador.....	Pohjois Esplanadikatu 25B, Helsinki
France.....1928	Ambassador.....	35 avenue Montaigne, Paris 8
Gabon.....1962	*Ambassador.....	Immeuble Soppo Priso, rue Joseph Clerc, Yaounde, Cameroon
Germany.....1950	Ambassador.....	Zitelmannstrasse 22, Bonn
Ghana.....1957	High Commissioner.....	E 115/3 Independence Ave., Accra
Greece.....1943	Ambassador.....	31, avenue Vassilissis Sofias, Athens 138
Guatemala.....1961	*Ambassador.....	5a Avenida 11-70 Zona I, Guatemala City
Guinea.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, E 115/3 Independence Ave., Accra, Ghana
Guyana.....1964	High Commissioner.....	91B Middle St., Georgetown
Haiti.....1954	Ambassador.....	Route du Canapé Vert, St. Louis de Turgeau, Port-au-Prince
Honduras.....1961	*Ambassador.....	c/o Canadian Embassy, Edificio Banco Anglo Costarricense, Avenida 2y Calle 3, San José, Costa Rica
Hungary.....1965	*Ambassador.....	c/o Canadian Embassy, Mickiewiczova 6, Prague 6, Czechoslovakia
Iceland.....1949	*Ambassador.....	c/o Canadian Embassy, Fridtjof Nansens Plass 5, Oslo, Norway
India.....1947	High Commissioner.....	4 Aurangzeb Rd., New Delhi
Indonesia.....1953	Ambassador.....	Djalan Budi Kemuliaan No. 6, Djakarta
Iran.....1958	Ambassador.....	Bezrouke House, corner of Takhte Djam- chid Ave. and Forsat St., Tehran
Iraq.....1961	*Ambassador.....	c/o Canadian Embassy, P.O. Box 1610, Tehran, Iran
Ireland.....1940	Ambassador.....	10 Clyde Rd., Balls-Bridge, Dublin
Israel.....1953	Ambassador.....	84 Hahashmonaim St., Tel Aviv
Italy.....1947	Ambassador.....	Via G.B. de Rossi 27, Rome
Ivory Coast.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, E 115/3 Independence Ave., Accra, Ghana
Jamaica.....1962	High Commissioner.....	32 Duke St., Kingston
Japan.....1929	Ambassador.....	16 Omote-Machi, 3-Chome, Akasaka Mina- to-ku, Tokyo
Jordan.....1965	*Ambassador.....	c/o Canadian Embassy, Immeuble Alpha, rue Clemenceau, Beirut, Lebanon
Kenya.....1965	*High Commissioner.....	c/o Office of the High Commissioner for Canada, Gailey and Roberts Bldg., Independence Ave., Dar-es-Salaam, United Republic of Tanzania
Korea.....1964	*Ambassador.....	c/o Canadian Embassy, 16 Omote-Machi, 3-Chome, Akasaka Minato-ku, Tokyo, Japan
Kuwait.....1965	*Ambassador.....	c/o Canadian Embassy, Bezrouke House, corner of Takhte Djamchid Ave. and Forsat St., Tehran, Iran
Lebanon.....1954	Ambassador.....	Immeuble Alpha, rue Clemenceau, Beirut
Luxembourg.....1945	*Ambassador.....	c/o Canadian Embassy, 35 rue de la Science, Brussels, Belgium

\* Dual accreditation; representative not resident in the country.

## 1.—Canadian Representation Abroad—continued

Country and Year Representation Established	Present Status of Representative	Address
Malaysia.....1958	High Commissioner.....	American International Assurance Bldg. Ampang Rd., Kuala Lumpur
Malta.....1964	*Ambassador.....	c/o Canadian Embassy, via G.B. de Rossi 27, Rome, Italy
Mexico.....1944	Ambassador.....	Melchor Ocampo 463-7, Mexico 5, D.F.
Morocco.....1962	*Ambassador.....	c/o Canadian Embassy, Edificio España, Plaza de España 2, Madrid, Spain
Nepal.....1965	*High Commissioner.....	c/o Office of the High Commissioner for Canada, 4 Aurangzeb Rd., New Delhi, India
Netherlands.....1939	Ambassador.....	5 and 7 Sophialaan, The Hague
New Zealand.....1940	High Commissioner.....	I.C.I. Building, Molesworth St., N.I., Wellington
Nicaragua.....1961	*Ambassador.....	c/o Canadian Embassy, Edificio Banco Anglo Costarricense, Avenida 2y Calle 3, San José, Costa Rica
Niger.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, New Barclays Bank Bldg., 40 Marina Dr., Lagos, Nigeria
Nigeria.....1960	High Commissioner.....	New Barclays Bank Bldg., 40 Marina Dr., Lagos
Norway.....1943	Ambassador.....	Fridtjof Nansens Plass 5, Oslo
Pakistan.....1950	High Commissioner.....	17A Harley St., Rawalpindi, Pakistan
Panama.....1961	*Ambassador.....	c/o Canadian Embassy, Edificio Banco Anglo Costarricense, Avenida 2y Calle 3, San José, Costa Rica
Paraguay.....1962	*Ambassador.....	c/o Canadian Embassy, Bartolomé Mitre 478, Buenos Aires, Argentina
Peru.....1944	Ambassador.....	Edificio El Pacifico-Washington, 7 Piso, Plaza Washington, Lima
Poland.....1943	Ambassador.....	Ulica Katowicka 31, Saska Kepa, Warsaw
Portugal.....1952	Ambassador.....	Rua Marques da Fronteira No. 8, Lisbon
Republic of Zambia.....1966	*High Commissioner.....	c/o Canadian Embassy, Bldg. C.C.C.I., Boulevard du 30 juin, Leopoldville
Senegal.....1962	Ambassador.....	4 Avenue de la Republique, Immeuble Daniel Sorono, Dakar
Sierra Leone.....1961	*High Commissioner.....	c/o Office of the High Commissioner for Canada, New Barclays Bank Bldg., 40 Marina Dr., Lagos, Nigeria
Singapore.....1966	High Commissioner.....	American International Bldg., Robinson Road and Telegraph St.
South Africa.....1940	Ambassador.....	Standard General Bldg., 238 Vermeulen St., Pretoria
Spain.....1953	Ambassador.....	Edificio España, Plaza de España 2, Madrid
Sudan.....1961	*Ambassador.....	c/o Canadian Embassy, 6 Sharia Roustom Pasha, Garden City, Cairo, United Arab Republic
Sweden.....1947	Ambassador.....	Strandvägen 7-C, Stockholm
Switzerland.....1947	Ambassador.....	88 Kirchenfeldstrasse, Berne
Syrian Arab Republic.....1965	*Ambassador.....	c/o Canadian Embassy, Immeuble Alpha, rue Clemenceau, Beirut, Lebanon
Thailand.....1961	*Ambassador.....	c/o Office of the High Commissioner for Canada, American International Assur- ance Bldg., Ampang Rd., Kuala Lumpur, Malaysia
Togo.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, E 115/3 Independence Ave., Accra, Ghana
Trinidad and Tobago.....1962	High Commissioner.....	72 South Quay, Port-of-Spain, Trinidad
Tunisia.....1961	*Ambassador.....	c/o Canadian Embassy, 88 Kirchenfeld- strasse, Berne, Switzerland
Turkey.....1947	Ambassador.....	Ahmet Agaoglu Sokagi, No. 32, Cankaya, Ankara
Uganda.....1962	*High Commissioner.....	c/o Office of the High Commissioner for Canada, Gailey and Roberts Bldg., In- dependence Ave., Dar-es-Salaam, United Republic of Tanzania
Union of Soviet Socialist Re- publics.....1943	Ambassador.....	23 Starokonyushenny Pereulok, Moscow
United Arab Republic.....1954	Ambassador.....	6 Sharia Roustom Pasha, Garden City, Cairo
United Republic of Tanzania.....1962 (1964)	High Commissioner.....	Gailey and Roberts Bldg., Independence Ave., Dar-es-Salaam

\* Dual accreditation; representative not resident in the country.

## 1.—Canadian Representation Abroad—continued

Country and Year Representation Established	Present Status of Representative	Address
United States of America.....1927	Ambassador.....	1746 Massachusetts Ave. N.W., Washington 6, D.C.
Upper Volta.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, E 115/3 Independence Ave., Accra, Ghana
Uruguay.....1952	Ambassador.....	1409 Avenida Agraciada, Montevideo
Venezuela.....1952	Ambassador.....	Avenida La Estancia No. 10, Ciudad Comercial Tamanaco, Caracas
Yugoslavia.....1943	Ambassador.....	Proliterskih Brigada 69, Belgrade
<b>Other Missions</b>		
Canadian Military Mission....1946	Head of Mission.....	Perthshire Block, Olympic Stadium, British Headquarters, Berlin (British Sector)
Delegation of Canada to the International Commission for Supervision and Control in Cambodia.....1954	Acting Commissioner.....	224 Kéo Chéa, Phnom Penh
Delegation of Canada to the International Commission for Supervision and Control in Laos.....1954	Commissioner.....	rue Tat Luang, Vientiane
Delegation of Canada to the International Commission for Supervision and Control in Viet-Nam.....1954	Commissioner.....	Camp Vo Thanh, P.O. Box 220, Saigon
Delegation of Canada to the North Atlantic Council.....1952	Permanent Representative and Ambassador.....	Place du Maréchal de Lattre de Tassigny Paris 16
Organization for Economic Co-operation and Development.....1961	Permanent Representative....	Place du Maréchal de Lattre de Tassigny Paris 16
Mission of Canada to European Communities.....1960	Head of Mission and Ambassador.....	35, rue-de la Science, Brussels 4
Permanent Mission of Canada to the United Nations.....1948	Permanent Representative and Ambassador.....	750 Third Ave., New York, N.Y.
Permanent Mission of Canada to the Office of the United Nations in Geneva.....1948	Permanent Representative and Ambassador.....	16, Parc du Chateau Banquet, Geneva
Canadian Delegation to the Conference of the Eighteen-Nation-Committee on Disarmament.....1962	Ambassador and Adviser to the Government on Disarmament	2, Parc du Chateau Banquet, Geneva
Permanent Delegation of Canada to the United Nations Educational, Scientific and Cultural Organization.....1960	Permanent Delegate.....	1, rue Chanez, Paris 16
<b>Consulates</b>		
Brazil.....1947	Consul.....	Rua 7 de Abril 252, São Paulo
France.....1965	Consul General.....	Hotel Grand Montré, Bordeaux
".....1965	Consul General.....	24 avenue du Prado, Marseille, Bouche-du-Rhône
Germany.....1956	Consul General.....	Ferdinandstrasse 69, Hamburg
".....1961	Consul.....	4 Duesseldorf 1, Koenigsallee 82, Duesseldorf
Italy.....1963	Consul General.....	Via Pirelli 19, Milan
Republic of the Philippines.....1949	Consul General.....	L and S Bldg., 1414 Dewey Blvd., Manila
United States of America.....1948	Consul General.....	607 Boylston St., Boston 16, Mass.
".....1947	Consul General.....	310 South Michigan Ave., Chicago, Ill.
".....1964	Consul.....	Illuminating Bldg., 55 Public Square, Cleveland, Ohio
".....1948	Consul.....	1139 Penobscot Bldg., Detroit 26, Mich.
".....1953	Consul General.....	510 W. Sixth St., Los Angeles 14, Cal.

\* Dual accreditation; representative not resident in the country.



## 1.—Canadian Representation Abroad—concluded

Country and Year Representation Established	Present Status of Representative	Address
<b>Consulates—concluded</b>		
United States of America.....1952	Consul General.....	Suite 1710, 225 Baronne St., New Orleans 12, La.
“.....1943	Consul General.....	680 Fifth Ave., New York, N.Y.
“.....1961	Consul.....	3 Penn Center Plaza, Philadelphia 2, Pa.
“.....1948	Consul General.....	333 Montgomery St., San Francisco 4, Cal.
“.....1953	Consul General.....	1407 Tower Bldg., 7th Ave., at Olive Way, Seattle 1, Wash.

## 2.—Representation of Other Countries in Canada

Country and Year Representation Established	Present Status of Representative	Address
Algeria.....1964	Ambassador.....	2200 R St. N.W., Washington, D.C. 20008, U.S.A.
Argentina.....1941	Ambassador.....	211 Stewart St., Ottawa
Australia.....1940	High Commissioner.....	90 Sparks St., Ottawa
Austria.....1952	Ambassador.....	85 Range Rd., Ottawa
Belgium.....1937	Ambassador.....	168 Laurier Ave. E., Ottawa
Brazil.....1941	Ambassador.....	450 Wilbrod St., Ottawa
Britain.....1928	High Commissioner.....	80 Elgin St., Ottawa
Burma.....1958	Chargé d'Affaires <i>ad interim</i> ...	116 Albert St., Ottawa
Cameroon.....1962	Ambassador.....	85 Range Rd., Ottawa
Ceylon.....1957	High Commissioner.....	85 Range Rd., Ottawa
Chile.....1942	Ambassador.....	56 Sparks St., Ottawa
China.....1942	Ambassador.....	201 Wurttemberg St., Ottawa
Colombia.....1953	Ambassador.....	140 Wellington St., Ottawa
Congo (Leopoldville).....1965	Chargé d'Affaires <i>ad interim</i> ...	54 Range Rd., Ottawa
Costa Rica.....1963	Ambassador.....	c/o Embassy of Costa Rica, 2112 S St. N.W., Washington, D.C. 20008, U.S.A.
Cuba.....1945	Ambassador.....	330 Chapel St., Ottawa
Cyprus.....1964	High Commissioner.....	c/o Embassy of Cyprus, 2211 R St. N.W., Washington, D.C. 20008, U.S.A.
Czechoslovakia.....1942	Ambassador.....	171 Clemow Ave., Ottawa
Dahomey.....1964	Ambassador.....	c/o Embassy of Dahomey, 6600-16th St. N.W., Washington, D.C. 20012, U.S.A.
Denmark.....1946	Ambassador.....	85 Range Rd., Ottawa
Dominican Republic.....1954	Ambassador.....	200 Rideau Terrace, Ottawa
Ecuador.....1961	Chargé d'Affaires <i>ad interim</i> ...	56 Sparks St., Ottawa
El Salvador.....1962	Ambassador.....	c/o Embassy of El Salvador, 2308 California St. N.W., Washington, D.C. 20008, U.S.A.
Finland.....1948	Ambassador.....	85 Range Rd., Ottawa
France.....1928	Ambassador.....	42 Sussex Dr., Ottawa
Gabon.....1962	Ambassador.....	4900-16th St. N.W., Washington, D.C. 20011, U.S.A.
Germany.....1951	Ambassador.....	1 Waverley St., Ottawa
Ghana.....1961	High Commissioner.....	75 Albert St., Ottawa
Greece.....1942	Ambassador.....	Chateau Laurier Hotel, Ottawa
Guatemala.....1961	Ambassador.....	2220 R St. N.W., Washington, D.C. 20008, U.S.A.
Guinea.....1962	Ambassador.....	c/o Embassy of Guinea, 2112 Leroy Pl. N.W., Washington, D.C. 20008, U.S.A.
Haiti.....1954	Ambassador.....	150 Driveway, Ottawa
Hungary.....1964	Chargé d'Affaires <i>ad interim</i> ...	7 Delaware Ave., Ottawa
Iceland.....1948	Ambassador.....	c/o Embassy of Iceland, 1906-23rd St. N.W., Washington, D.C. 20008, U.S.A.
India.....1947	High Commissioner.....	200 MacLaren St., Ottawa
Indonesia.....1953	Ambassador.....	85 Range Rd., Ottawa
Iran.....1956	Ambassador.....	85 Range Rd., Ottawa
Iraq.....1961	Ambassador.....	1801 P St. N.W., Washington, D.C. 20036, U.S.A.
Ireland.....1939	Ambassador.....	170 Metcalfe St., Ottawa
Israel.....1953	Ambassador.....	45 Powell Ave., Ottawa
Italy.....1947	Ambassador.....	172 MacLaren St., Ottawa

## 2.—Representation of Other Countries in Canada—concluded

Country and Year Representation Established	Present Status of Representative	Address
Ivory Coast.....1964	Ambassador.....	c/o Embassy of Ivory Coast, 2424 Massachusetts Ave. N.W., Washington, D.C. 20008, U.S.A.
Jamaica.....1962	High Commissioner.....	90 Sparks St., Ottawa
Japan.....1928	Ambassador.....	75 Albert St., Ottawa
Korea.....1963	Ambassador.....	77 Metcalfe St., Ottawa
Kuwait.....1965	Ambassador.....	2940 Tilden St. N.W., Washington, D.C. 20008, U.S.A.
Lebanon.....1955	Ambassador.....	401 Albert St., Ottawa
Luxembourg.....1950	Ambassador.....	c/o Embassy of Luxembourg, 2210 Massachusetts Ave. N.W., Washington, D.C. 20008, U.S.A.
Madagascar.....1965	Ambassador.....	c/o Embassy of the Malagasy Republic, 2374 Massachusetts Ave. N.W., Washington, D.C. 20008, U.S.A.
Mali.....1963	Ambassador.....	c/o Embassy of Mali, 2130 R. St. N.W., Washington, D.C. 20008, U.S.A.
Mexico.....1944	Ambassador.....	88 Metcalfe St., Ottawa
Morocco.....1962	Ambassador.....	c/o Embassy of Morocco, 1601-21st St. N.W., Washington, D.C. 20009, U.S.A.
Nepal.....1966	Ambassador.....	c/o Embassy of Nepal, 2131 Leroy Pl. N.W., Washington, D.C. 20008, U.S.A.
Netherlands.....1939	Ambassador.....	12 Marlborough Ave., Ottawa
New Zealand.....1942	High Commissioner.....	77 Metcalfe St., Ottawa
Nicaragua.....1963	Ambassador.....	1627 New Hampshire Ave. N.W., Washington, D.C. 20009, U.S.A.
Niger.....1963	Ambassador.....	c/o Embassy of Niger, 2013 Q St. N.W., Washington, D.C. 20009, U.S.A.
Nigeria.....1966	High Commissioner.....	Ottawa
Norway.....1942	Ambassador.....	140 Wellington St., Ottawa
Pakistan.....1949	High Commissioner.....	505 Wilbrod St., Ottawa
Panama.....1962	Ambassador.....	c/o Embassy of Panama, 2601-29th St. N.W., Washington, D.C. 20008, U.S.A.
Peru.....1944	Ambassador.....	539 Island Park Drive, Ottawa
Poland.....1942	Ambassador.....	10 Range Rd., Ottawa
Portugal.....1952	Ambassador.....	285 Harmer Ave., Ottawa
Rwanda.....1965	Ambassador.....	c/o Embassy of the Republic of Rwanda, 5308 Colorado Ave. N.W., Washington, D.C. 20011, U.S.A.
Senegal.....1963	Ambassador.....	c/o Embassy of Senegal, 2112 Wyoming Ave. N.W., Washington, D.C. 20008, U.S.A.
South Africa.....1938	Ambassador.....	15 Sussex Drive, Ottawa
Spain.....1953	Ambassador.....	124 Springfield Rd., Ottawa
Sudan.....1966	Ambassador.....	c/o Permanent Mission of the Sudan to the United Nations, 757 Third Ave., New York 17, N.Y., U.S.A.
Sweden.....1943	Ambassador.....	140 Wellington St., Ottawa
Switzerland.....1946	Ambassador.....	5 Marlborough Ave., Ottawa
Thailand.....1962	Chargé d'Affaires <i>ad interim</i> ....	119 Range Rd., Ottawa
Togo.....1966	Ambassador.....	c/o Embassy of the Republic of Togo, 2208 Massachusetts Ave. N.W., Washington, D.C. 20008, U.S.A.
Trinidad and Tobago.....1962	High Commissioner.....	75 Albert St., Ottawa
Tunisia.....1957	Ambassador.....	c/o Tunisian Permanent Mission to the United Nations, Tunisia House, 40 East 71st St., New York 21, N.Y., U.S.A.
Turkey.....1944	Ambassador.....	197 Wurttemberg St., Ottawa
Uganda.....1964	High Commissioner.....	c/o Permanent Mission of Uganda to the United Nations, 801 Second Ave., New York 17, N.Y., U.S.A.
Union of Soviet Socialist Republics.....1942	Ambassador.....	285 Charlotte St., Ottawa
United Arab Republic.....1954	Ambassador.....	454 Laurier Ave. East, Ottawa
United Republic of Tanzania.....1965	High Commissioner.....	230 Gloucester St., Ottawa
United States of America.....1927	Ambassador.....	100 Wellington St., Ottawa
Upper Volta.....1966	Ambassador.....	c/o Embassy of the Republic of Upper Volta, 5500-16th St. N.W., Washington, D.C. 20011, U.S.A.
Uruguay.....1948	Chargé d'Affaires <i>ad interim</i> ....	124 Springfield Rd., Ottawa
Venezuela.....1953	Ambassador.....	140 Wellington St., Ottawa
Yugoslavia.....1942	Ambassador.....	17 Blackburn Ave., Ottawa

## Section 2.—International Activities, 1965-66

### Subsection 1.—Canada and Commonwealth Relations

The Commonwealth today has been transformed basically from the compact and like-minded family of nations of predominantly European stock which constituted the Commonwealth association from the enactment of the Statute of Westminster to 1947. With its present membership of 23 sovereign states covering about one quarter of the earth's land surface, representing more than 750,000,000 people of many colours, creeds and languages, and including both economically developed and under-developed countries as well as governments committed and uncommitted in the international power groupings, the Commonwealth more accurately reflects the world over which it spreads so widely. The interests of its members extend to all continents and the variety of problems demanding their attention has greatly increased in scarcely more than a decade.

Commonwealth members are enumerated according to the year (if post-1931, noted in brackets) when membership was proclaimed: Britain; Canada; Australia; New Zealand; India (1947); Pakistan (1947); Ceylon (1948); Ghana (1957); Malaya (1957); Nigeria (1960); Cyprus (1961); Sierra Leone (1961); Tanganyika (1961); Jamaica (1962); Trinidad and Tobago (1962); Uganda (1962); Kenya (1963); Malawi (1964); Malta (1964); Zambia (1964); Gambia (1965); Singapore (1965); Guyana (1966). Early in 1964, Tanganyika joined Zanzibar to form the United Republic of Tanzania. When Singapore, Sarawak and Sabah joined the Federation in September 1963, Malaya became Malaysia; Singapore separated from Malaysia in August 1965.

Membership in the Commonwealth is one of the fundamental aspects of Canadian foreign policy. Canada has supported the extension and development of a strong Commonwealth, capable of exerting significant influence for international peace and progress. Commonwealth ties give Canada a special relationship with this group of nations which, despite the diversity of their backgrounds, share important ideals and traditions in common. Commonwealth ties are characterized in the main by a spirit of co-operation developed through consultation and exchange of views. These are continuous not only in Commonwealth capitals but in other countries, and also at United Nations and other international gatherings.

In addition to these continuing exchanges at many levels, special meetings are convened for the purpose of discussing and co-ordinating the interests of Commonwealth members in various special fields, and to review international developments in the Commonwealth context. The most important conference of this kind in 1966 was the meeting of Heads of Government (Prime Ministers and Presidents) held in Lagos, Nigeria, Jan. 11-12, to discuss Rhodesia. This was the first such meeting to be held in Africa, the first to be held after the establishment of the Commonwealth Secretariat, and the first meeting called to deal with a single political issue.

Canada's external aid for developing countries continued to be directed, in the main, to Commonwealth countries through the Colombo Plan, the Commonwealth Caribbean Program, and the Special Commonwealth African Assistance Plan (SCAAP). Canada's total contribution under the Colombo Plan since its inception exceeds \$670,000,000. Canada aided Commonwealth countries in Africa through SCAAP to a total of \$38,000,000 for the period from 1960 to the end of March 1966. Approximately \$31,000,000 was made available for aid and technical assistance to Commonwealth Caribbean countries from 1958 to the end of March 1966. During 1965, Canada also provided, on an increased scale, assistance in military training designed to improve the defence capability of certain Commonwealth countries.

Canada is an active participant in the Commonwealth Scholarship and Fellowship Plan (see pp. 179-180) and during the 1965-66 academic year received 222 students under this Plan, 80 p.c. of them from the developing countries; 77 Canadian students continued their higher education in other Commonwealth countries. Canada is also playing a significant part in the training and provision of teachers for service in Commonwealth countries and



assisting in plans for co-operation in technical education. During the academic year 1965-66, there were 533 Canadian teachers and university professors serving under Canadian Government aid programs in the less-developed countries of Southeast Asia, Africa and the Caribbean area, a very substantial proportion of them in Commonwealth countries.

### Subsection 2.—Canada and the United Nations

The constitutional disagreement over the financing of peace-keeping operations which led to the premature adjournment of the 19th Session of the General Assembly was not resolved during the 20th Session in 1965 but at least a compromise was reached which permitted the Organization to resume functioning. The compromise took the form of a consensus reached in the Special Committee on Peace-keeping Operations that financial difficulties should be solved through voluntary contributions from member states, and that the Assembly should not apply the loss-of-vote penalty of Article 19 of the Charter for failure to pay assessments for peace-keeping in the Congo and in the Middle East. A Canadian proposal to extend the mandate of the Special Committee and to renew the appeal for voluntary contributions was accepted by the Assembly in December 1965.

The United Nations Emergency Force (UNEF) in the Middle East continued throughout 1965, as did the United Nations Force in Cyprus (UNFICYP), and Canada participated in both. To improve the financial position of UNEF, Canada introduced a resolution, subsequently adopted by the Assembly, which combined the principle of assessment with provision for meeting any shortfall in funds without resort to voluntary contributions. The 18-year-old United Nations Military Observer Group in India and Pakistan (UNMOGIP) was reinforced by the United Nations India-Pakistan Observer Mission (UNIPOM) in September 1965 to deal with the Indo-Pakistani conflict over Kashmir. Canada provided the Commander for UNIPOM as well as an air transport unit and observers.

In September, Canada was happy to support the admission to the United Nations of Gambia, the Maldive Islands and Singapore. In contrast, Canada regretted the withdrawal of Indonesia from the United Nations in January 1965 because it has consistently supported the principle of universality in the United Nations. However, Canada did not vote in favour of the representation of the People's Republic of China in the United Nations because it could not accept several of that Republic's conditions for membership, such as the expulsion of the Republic of China, a founding member of the United Nations. As regards the Rhodesian crisis, Canada supported two United Nations resolutions which condemned the unilateral declaration of independence by Southern Rhodesia, but was unable to support another resolution which requested Britain to employ all measures, including military force, to bring down the Smith regime.

In the economic field, Canada supported the merger of the Expanded Programme of Technical Assistance (EPTA) and the Special Fund into the United Nations Development Programme (UNDP), the establishment of a new United Nations Organization for Industrial Development (UNOID), and a resolution designed to extend and put on a permanent basis the World Food Programme, an experimental co-operative arrangement between the Food and Agriculture Organization (FAO) and the United Nations which was begun in 1961 as a result of a Canadian initiative.

In the social sector, the Specialized Agencies continued their efforts to promote education, to relieve hunger and to improve public health. The Canadian representative to the United Nations Children's Fund (UNICEF) was elected to the Chairmanship of the Programme Committee, and the commitment of the Canadian public to UNICEF is demonstrated by the fact that the government contribution (\$1,000,000) was more than equalled by proceeds from the UNICEF Hallowe'en and Christmas Card campaigns (\$1,100,000). Canada has continued to support international efforts for the relief and rehabilitation of refugees; in 1965 contributions to both the United Nations High Commissioner for Refugees (UNHCR) and to the United Nations Relief and Works Agency (UNRWA) were increased, and a Canadian served as Chairman of the Executive Committee of the UNHCR.

The United Nations marked 1965 as International Co-operation Year (ICY). UN member governments, together with interested non-governmental organizations, organized activities designed to emphasize the continuing, if unpublicized, nature of international co-operation in many fields. The Canadian Permanent Representative to the United Nations was Chairman of the United Nations Committee for ICY for most of 1965. Co-operative projects in education, arts, science and sports, the issue of ICY postage stamps and special features on radio and television for both domestic networks and international transmission were features of the Canadian ICY program.

**Canadian Financial Contributions to the United Nations.**—In 1965, Canada's contributions to the United Nations system were as follows:—

<i>Agency</i>	<i>Percentage Assessment</i>	<i>Contribution (Canadian \$)</i>
<b>United Nations—</b>		
Regular budget.....	3.17	3,016,439
<b>Special Accounts—</b>		
Operations in the Middle East (UNEF).....	..	734,304
Force in Cyprus (UNFICYP) <sup>1</sup> .....	..	3,516,000
Congo Civilian Fund.....	..	500,000
Relief and Works Agency (UNRWA)—		
Cash.....	..	500,000
Food aid.....	..	699,969
World Food Program—		
Cash.....	..	400,000
Commodities.....	..	1,462,685
High Commissioner for Refugees (UNHCR).....	..	290,000
Expanded Programme for Technical Assistance (EPTA).....	..	2,325,000
Special Fund.....	..	5,000,000
Children's Fund (UNICEF).....	..	1,000,000
Institute for Training and Research (UNITAR).....	..	60,000
Voluntary contribution <sup>2</sup> .....	..	4,000,000
<b>Specialized Agencies and International Atomic Energy Agency—</b>		
International Labour Organization (ILO).....	3.36	674,682
Food and Agriculture Organization (FAO)—		
Regular budget.....	4.15	791,849
Voluntary programs.....	..	5,000
World Health Organization (WHO).....	2.83	1,198,191
United Nations Educational, Scientific and Cultural Organization (UNESCO).....	2.98	151,436
International Civil Aviation Organization (ICAO).....	4.51	236,541
International Telecommunication Union (ITU).....	3.26	149,850
World Meteorological Organization (WMO).....	2.63	47,885
Inter-Governmental Maritime Consultative Organization (IMCO).....	1.60	13,256
Universal Postal Union (UPU).....	2.69	29,267
International Monetary Fund (IMF).....	s	s
International Bank for Reconstruction and Development (IBRD).....		
International Finance Corporation (IFC).....		
International Development Association (IDA) <sup>4</sup> .....	..	15,027,012
International Atomic Energy Agency—		
Regular budget.....	2.87	228,547
Operational budget.....	..	61,992
<b>Related Organizations—</b>		
Inter-Governmental Committee for European Migration (ICEM).....	s	60,000
International Committee of the Red Cross.....	..	15,000
United Nations Association in Canada.....	..	17,000

<sup>1</sup> Estimated. Between inception of UNFICYP on Mar. 4, 1964 and Dec. 26, 1965, the net cost to Canada of its participation in the force was \$7,002,000. Canada pays all costs of maintaining its contingent in Cyprus but recovers from the UN the out-of-pocket expenses of Canadian personnel at UNFICYP headquarters. The figure cited does not include salaries and similar costs which Canada would have had to pay if the personnel had remained in Canada.

<sup>2</sup> In response to a request from the Secretary-General, Canada agreed on June 27, 1965 to make a voluntary contribution of \$4,000,000 to the UN to assist it in its current financial difficulties. <sup>3</sup> Canada has paid in full its subscription to these organizations so that no payments were required in 1965; as a result of a review of quotas it is expected that additional subscriptions will be made to the IBRD and IMF in 1966.

<sup>4</sup> Of the commitment of \$15,027,012, which represents the first instalment of Canada's supplementary contribution to IDA, \$13,274,518 was drawn during 1965 and \$2,500,000 in January 1966. <sup>5</sup> Canada withdrew from ICEM in 1962 but has continued to make an annual grant for the transportation of refugees.

**Specialized Agencies.**—Canada is a member of each of the 13 Specialized Agencies of the UN. Additionally, Canada holds membership in the International Atomic Energy Agency (IAEA), an autonomous international organization under the aegis of the UN. These Agencies are invested with wide international responsibilities established by inter-governmental agreement, and act in relationship with the UN to assist in carrying out the terms of the Charter. Co-ordination of activities of the Agencies is promoted by the Administrative Committee on Co-ordination established by the Economic and Social Council. This Committee is composed of the Secretary General of the UN, the executive heads of the Specialized Agencies, the Director General of the IAEA and other high officials of the UN. It considers common administrative questions, inter-agency program co-ordination and projects or problems of special urgency to be undertaken jointly by several Agencies. The Agencies also report annually to the Economic and Social Council of the UN.

*International Labour Organization.*—The International Labour Organization (ILO) was originally established with the League of Nations in 1919 and became a Specialized Agency of the UN in 1946. It brings together representatives of governments, employers and workers from 114 member states in an attempt to promote social budgets by improving living and working conditions in all parts of the world. The ILO is responsible for a number of technical programs financed by the United Nations Development Programme, as well as training programs under its regular budget. To further its work, the ILO holds numerous meetings during the year, including the International Labour Conference in Geneva each June. At the 49th session of the Conference in June 1965, the principal debate focused, as it has done in recent years, on a continuing examination of modernizing and streamlining the programs and structures of the Organization.

*Food and Agriculture Organization.*—The Food and Agriculture Organization (FAO) came into being in 1945, the first Conference being held in that year in Quebec City. The objectives of the Organization are to raise the levels of nutrition and living standards of its members and to improve the techniques of the production and distribution of food and agricultural, fishery and forestry products. To this end, the FAO Secretariat collects, analyses and distributes technical and economic information and encourages appropriate national and international action. A Council meets twice a year to give direction and policy guidance to the Secretariat; the FAO Conference, which is the governing body of the Organization, meets every other year. Headquarters are in Rome, Italy.

Canada has participated actively in FAO activities and is a member of the Council, the Committee on Commodity Problems (CCP), the Consultative Sub-Committee on Surplus Disposals, the FAO Group on Grains, the North American Forestry Commission and other FAO bodies. A number of Canadians are on the staff at Rome headquarters and many Canadians have undertaken assignments under FAO technical assistance programs. Canadian membership in the Organization is provided for by an Act of the Canadian Parliament passed in 1945. A committee of officials from Canadian Government departments (the Canadian Interdepartmental FAO Committee) has been established to maintain liaison between the FAO Secretariat and the Canadian Government.

The World Food Program first began operations on a three-year experimental basis at the beginning of 1963, under the joint auspices of the FAO and the UN. The Program provides food aid on a multilateral basis for emergency relief and promotes economic and social development, including feeding of children. At a UN-FAO Pledging Conference in New York in January 1966, \$208,000,000 was pledged toward a second three-year program (1966-68). Canada, with a pledge of \$27,500,000, is the second largest supporter of the Program.

*World Health Organization.*—The World Health Organization (WHO) came into being in 1948 and is one of the largest of the Specialized Agencies of the UN, having a membership of 121. Functioning through the World Health Assembly (an organization composed of an Executive Board, a Secretariat and six regional committees), WHO acts as a direct-



ing and co-ordinating authority on international health matters. In addition, it provides advisory and technical services to help countries develop and improve their health services. The 18th World Health Assembly was held in Geneva in May 1965. (See also the item "International Health" in Subsect. 7, Sect. 1, Part I of Chapter VI on Public Health, Welfare and Social Security.)

*United Nations Educational, Scientific and Cultural Organization.*—The United Nations Educational, Scientific and Cultural Organization (UNESCO) was established in 1946 "to contribute to peace and security by promoting collaboration among the nations through education, science and culture in order to further universal respect for justice, for the rule of law, for human rights and fundamental freedoms". Its headquarters is in Paris and total membership at the end of 1965 was 121 states.

The Organization is made up of three principal organs—the General Conference which is the policy-making body, the Executive Board and the Secretariat. Representatives from member states make up the General Conference which meets every two years to consider applications for membership, elect the Executive Board, plan the program and approve the budget for the ensuing two-year period. The latest General Conference was held in Paris in October and November 1964. It approved a budget of \$48,900,000, giving priority to the educational needs of the developing countries and to science activities, particularly the application of science to development; the Canadian assessment rate is 2.98 p.c. The next General Conference takes place in Paris in October 1966. Further information about the Organization may be obtained from the Canadian National Commission for UNESCO, Ottawa.

*International Civil Aviation Organization.*—The International Civil Aviation Organization (ICAO), with headquarters in Montreal, is the only Specialized Agency of the UN with headquarters in Canada. Canada has been a member of the 27-nation Council, the governing body of ICAO, since its inception in 1947. The 15th Session of the ICAO Assembly, consisting of all member states, was held in Montreal from June 22 to July 19, 1965. A Canadian was elected President of the Assembly. During February 1966 a special ICAO meeting was held in Montreal to discuss the question of liability in connection with air accidents.

*International Telecommunication Union.*—Canada is a member of the International Telecommunication Union (ITU), a Specialized Agency of the UN, which traces its origin to the International Telegraph Convention of 1865 and the International Radio Telegraph Convention of 1906. The Plenipotentiary Conference, the supreme authority of the ITU, met in Montreux, Switzerland from Sept. 14 to Nov. 12, 1965. The Conference revised the International Telecommunication Convention which will come into force on Jan. 1, 1967. Canada is represented on the 29-member Administrative Council, the executive organ of the Union.

*World Meteorological Organization.*—Canada is a member of the World Meteorological Organization (WMO), a Specialized Agency of the UN since 1951 but developed from the International Meteorological Organization founded in 1878. During 1965, Canada was represented at the regular meetings of a number of the subsidiary bodies of WMO.

*Inter-Governmental Maritime Consultative Organization.*—The Inter-Governmental Maritime Consultative Organization (IMCO) was established in 1959 to promote international co-operation on technical shipping problems and the adoption of the highest standards of safety and navigation. Canada participated in the Conference held in Jordan under the auspices of IMCO from Mar. 24 to Apr. 9, 1965 which drew up the Convention of the Facilitation of Maritime Travel and Transport. Canada was re-elected to the Administrative Council and the Maritime Safety Committee during their regular sessions held in Paris in September 1965.

*Universal Postal Union.*—With a membership of 126, the Universal Postal Union (UPU) is one of the largest of the Specialized Agencies of the UN; it is also one of the oldest,

as it was founded in Berne in 1874 with the principal aim of improving postal services throughout the world and promoting international collaboration. The Universal Postal Congress is the supreme authority of the UPU and normally meets every five years to review the Universal Postal Convention and its subsidiary instruments. In the interim, UPU activities are carried on by an executive council of which Canada is at present a member, a consultative committee on postal studies, and an international bureau. The 15th Congress was held in Vienna in May-July 1964.

*International Monetary Fund.*—The International Monetary Fund, established by the Bretton Woods Conference in 1944, came into being in 1945. It provides machinery for international consultation and collaboration on monetary, payment and exchange problems, including the promotion of exchange stability, the elimination of exchange restrictions, the establishment of a multilateral system of current payments and the expansion and balanced growth of international trade. Also, member countries under certain conditions may draw on the regular resources of the Fund, which now amount to some \$19,200,000,000 (of which the equivalent of about \$13,600,000,000 is in gold and convertible currencies) or on the supplementary resources of \$6,000,000,000 made available in 1962 under the General Arrangements to Borrow. The Fund has 103 members (as at Mar. 31, 1966). Canada has been represented on the Fund's Executive Board since its inception.

*International Bank for Reconstruction and Development.*—The IBRD or World Bank was founded at the same time as the International Monetary Fund at the Bretton Woods Conference in 1944 to assist the development of productive resources in member countries by extending loans where private capital is not available on reasonable terms and by providing technical assistance. The loans are made from the paid-up subscriptions of member states, from the surplus accumulated by the Bank and from loans raised in the markets of member states. By Dec. 31, 1965, the subscribed capital was \$21,606,000,000 (U.S.). The Bank's first loans were for European postwar reconstruction but in 1948 the Bank turned to lending for development and an increasing proportion of its funds has been directed to the less-developed areas of the world. As of Dec. 31, 1965, the Bank had made 446 loans totalling nearly \$9,500,000,000 (U.S.) since it started operations in 1946, and had used or been able to allocate for lending the equivalent of approximately \$1,779,000,000 from paid-in capital, including the full \$75,000,000 of the paid-in portion of Canada's subscription.

Unlike the year 1964 when there were no public offerings, 1965 was marked by an intensive marketing campaign that included public offerings of the Bank's bonds in world markets. These offerings, aggregating the equivalent of nearly \$300 000,000, included public issues of the Bank in the Canadian market for the first time in nearly 10 years; the Canadian issue was \$25,000,000, offered in February.

*International Finance Corporation.*—The function of the International Finance Corporation, which is an affiliate of the IBRD, is to promote the growth of productive private enterprise by assisting private capital, by acting as a clearing house in bringing together investment opportunities and private capital and by helping to enlist managerial skill and experience when not otherwise available to a project. Of a total capital subscription of \$99,000,000 (U.S.), Canada has provided \$3,600,000.

*International Development Association.*—The IDA, also an affiliate of the IBRD, was established in September 1960 to meet the situation of a growing number of less-developed countries whose need for and ability to make use of outside capital is greater than their ability to service conventional loans. Consequently, the terms of IDA development credits are designed to impose far less burden on the balance of payments of borrowing countries than conventional loans. Credits extended to date have each been for a term of 50 years, bearing no interest. At the end of 1965, paid-in and prospective resources of IDA amounted to \$1,676,300,000 (U.S.). Prospective contributions to be paid in over the three years 1965-68 (subject to legislative authorization) will amount to \$740,745,000 (U.S.), of which



Canada's share will be \$41,700,000 (U.S.). IDA began operations in November 1960 and extended its first development credit in May 1961. By Dec. 31, 1965, it had extended a total of 79 development credits totalling \$1,192,300,000 to 30 countries in Africa, Asia, the Middle East and the Western Hemisphere.

**International Atomic Energy Agency.**—Formed in 1957, the International Atomic Energy Agency (IAEA) is an autonomous international organization under the aegis of the UN. The Agency was given a mandate to seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world in a variety of ways. Because Canada has been designated as one of the five members most advanced in nuclear technology, including the production of source materials, a Canadian representative has served on the IAEA Board of Governors since the inception of the Agency.

As of June 1966, IAEA membership consisted of 96 states. The organization of conferences and symposia of experts, the dissemination of information and the provision of technical assistance are among the methods that the Agency adopts to carry out its functions. With the rapid expansion in the use of nuclear power much of the Agency's program is devoted to this field, as well as to the use to which isotopes may be put in agriculture and medicine. An important aspect of the IAEA activities that is becoming of increasing significance relates to the development and application of safeguard measures to ensure that nuclear materials supplied for peaceful purposes are not diverted to military uses.

**International Law Commission.**—By Article 13(1) of the Charter of the United Nations, one of the purposes of the UN General Assembly is to encourage the progressive development of international law and its codification. In order to implement and to assist in this function, the International Law Commission was created by a General Assembly resolution dated Nov. 21, 1947. It is composed of 25 members who are elected in their individual capacity. They serve for terms of five years and, in general, represent the main forms of civilization and principal legal systems of the world. On Nov. 28, 1961, Canada's Under-Secretary of State for External Affairs was elected to membership of this Commission. The 25 countries whose nationals form, at present, the International Law Commission are: Afghanistan, Algeria, Argentina, Austria, Brazil, Britain, Canada, China, Ecuador, Finland, France, India, Iraq, Israel, Italy, Japan, Nigeria, Poland, Senegal, Spain, the Union of Soviet Socialist Republics, the United Arab Republic, the United States of America, Uruguay and Yugoslavia.

### **Subsection 3.—Canada and the North Atlantic Treaty Organization\***

Two Ministerial meetings were held during 1965 and meetings of the Permanent Representatives to the North Atlantic Council were held continuously throughout the year at NATO headquarters in Paris.

The annual spring meeting was held in London on May 11-12, attended by the Foreign Ministers of the NATO Alliance. The Canadian delegation was led by the Secretary of State for External Affairs. In surveying the international scene, Ministers noted that, so far as Europe was concerned, the situation was basically unchanged. There had been no major crisis or confrontation and the trend toward increased contacts between East and West has continued. On the other hand, the fundamental causes of tension still persisted and little, if any, progress had been made toward removing them. Particular attention was given during the discussions to areas of tension or conflict, such as Malaysia, Viet-Nam, Cyprus, the Dominican Republic and some African States, where threats to international security and peace had arisen.

\* The terms of the Treaty and the organization of the Council and subordinate committees are dealt with in the 1954 Year Book at pp. 113-115. A short review of the events leading up to the establishment of NATO and its subsequent membership is given in the 1960 Year Book at p. 167.



The Ministers welcomed the continuing progress in political consultation within the Alliance, observed with satisfaction the more frequent attendance of Ministers and senior officials from capitals at regular meetings of the Council in permanent session, and noted that the Council had embarked on the study of the state of the Alliance which, at the preceding Ministerial meeting, it had been directed to undertake. The hope was expressed that, without prejudging the legal and political position of any member, an early solution would be found to the difficulties facing the UN and thus enable that organization to play its proper role in helping to preserve international peace and security.

The annual Ministerial meeting held in Paris Dec. 14-16 was attended by a Canadian delegation led by the Secretary of State for External Affairs and the Minister of National Defence. The Ministers noted that members of NATO had promoted and extended their contacts and exchanges with the U.S.S.R. and the countries of Eastern Europe, and affirmed that they would continue to seek an improvement in their relations with these countries. It was a matter for satisfaction that the efforts made in this regard had met with some degree of response, mainly in the sphere of bilateral relations. The Ministers noted, however, that the U.S.S.R. continued to oppose a settlement of the cardinal issues between East and West and they therefore emphasized their determination to maintain the unity of the Alliance and ensure its collective defence.

The Ministers noted the progress made in studies of the interrelated questions of strategy, force requirements and resources, which had been initiated at the Ottawa session in May 1963. Force goals for the period 1966-70 were being worked out as the first of a series of steps designed to secure closer alignment between NATO military requirements and national force plans within the agreed strategic concept of a forward defence posture. They accepted in principle the introduction of new procedures designed to improve the annual process of reviewing the defence efforts of member countries and agreeing upon their force contributions. These procedures, by projecting Alliance force goals and country plans five years ahead each year, are intended to enhance the capacity of the Alliance to adapt its defence plans to changes both in military technology and in the international situation. The Ministers instructed the Council in permanent session to review the organizational and financial basis of the Allied Command Europe Mobile Force.

The Secretary General reported on his activities under the 'watching brief' in regard to Greek-Turkish relations entrusted to his predecessor by the Council at The Hague in May 1964. The Ministers agreed that these activities should continue and also reiterated their support for the efforts of the UN to reduce tension in Cyprus. The Council endorsed the Secretary General's plea for an early resumption of constructive discussions between Greece and Turkey and stressed the importance of a speedy solution to the financial and other problems involved in the continuation of the UN peace-keeping operation.

**Canadian Contributions to NATO.**—Support for NATO during 1965 continued to be one of the foundations of Canadian foreign policy. As its contribution to the military strength of the Alliance, Canada maintains an army brigade and an air division in Europe and supporting forces in Canada, including one battalion assigned to the Allied Command Europe Mobile Force. It has assigned a substantial naval force to the Supreme Allied Commander Atlantic (SACLANT) for the defence of the Canada-United States region in case of emergency and participates with the United States in the defence of the North American Continent through the North American Air Defence Command (NORAD).

Since 1950, Canada has contributed approximately \$1,800,000,000 in mutual aid to European members of NATO. The aid program, consisting of contributions to NATO infrastructure and military costs, transfers of equipment to member countries and aircrew training in Canada of NATO forces, continued in 1965. This program has decreased in magnitude with the changing conditions and the increasing ability of the European members to meet their individual defence requirements.

#### Subsection 4.—Canadian External Aid Programs

**The Colombo Plan.**—The Colombo Plan for Co-operative Economic Development in South and Southeast Asia was conceived at the Commonwealth Meeting of Foreign Ministers held at Colombo, Ceylon, in January 1950. Although the Plan was initiated by Commonwealth governments, it is not exclusively a Commonwealth Program. It is designed to assist in the economic development and the raising of living standards of all countries and territories in the general area of South and Southeast Asia. Its membership now includes Afghanistan, Australia, Bhutan, Britain, Brunei, Burma, Cambodia, Canada, Ceylon, India, Indonesia, Japan, Korea, Laos, Malaysia, Maldives Islands, Nepal, New Zealand, Pakistan, the Philippines, Thailand, Viet-Nam and the United States; the latter is also engaged in a substantial program of economic aid in the same region. Afghanistan and the Maldives Islands are the latest members and were admitted to membership in 1963.

The Colombo Plan is supervised by a Consultative Committee composed of Ministers of the member countries, who meet once a year to review projects and exchange views on policy matters. As a consultative body, it makes no collective policy decisions binding member countries; a Council for Technical Co-operation, on which Canada is represented, meets regularly in Ceylon to develop the technical co-operation program of the Plan. Consultative Committee meetings were held in Karachi in 1952, New Delhi in 1953, Ottawa in 1954, Singapore in 1955, Wellington in 1956, Saigon in 1957, Seattle in 1958, Jogjakarta in 1959, Tokyo in 1960, Kuala Lumpur in 1961, Melbourne in 1962, Bangkok in 1963 and London in 1964. At the Jogjakarta meeting it was agreed to extend the Colombo Plan for another five years from June 1961, and it was similarly extended for a further five years at the London meeting in 1964. Reports of the Committee on progress and future plans are published after each annual meeting; each report also contains sections describing the activities of member countries.

From the inception of the Plan in 1950 through March 1966, Canada made available a total of \$670,619,000 in grant aid for capital and technical assistance projects in South and Southeast Asia. Although nine countries are now receiving capital assistance from Canada, the largest contributions have so far been made to Ceylon, India, Malaysia and Pakistan. The Canadian contribution consists primarily of direct assistance to various development projects, including equipment for multi-purpose irrigation and hydro-electric projects, power-generating plants, construction and fisheries projects and resources surveys, hospital equipment and cobalt therapy units, as well as educational and laboratory equipment and books. It has also included gifts of raw materials, commodities and foodstuffs, such as industrial metals, asbestos, fertilizer, wheat, wheat flour and butter, from the internal sale of which recipient governments have been able to raise funds to meet local costs of economic development projects.

Under the Technical Assistance Program, up to March 1966, more than 3,500 persons from all countries in the area had come to Canada for training in a variety of fields, the major ones being public administration and finance, agriculture, co-operatives, engineering, mining and geology, statistics, health education and social welfare. More than 375 Canadian experts had been sent abroad for service in Colombo Plan countries in such fields as fisheries, agriculture, engineering, mining and prospecting, co-operatives, public administration, education and vocational training, and public health. Other Canadians were employed on aerial resources survey teams and on the installation and operation of capital equipment.

**Commonwealth Caribbean Program.**—In 1958, when the Federation of the West Indies was being formed, Canada undertook a five-year \$10,000,000 program of economic and technical assistance. Following the dissolution of the Federation in 1962, it was decided to continue providing assistance to its component territories—Jamaica, Trinidad and Tobago, Barbados, British Guiana (Guyana), British Honduras and the Leeward and Windward Islands—and, since then, a total of \$21,180,000 in loans and grants has been made available to the area, including \$10,000,000 under the 1965-66 program.



Under this program, the area and its territories have been provided with two passenger-cargo ships for inter-island transportation, a deep-water wharf at St. Vincent, a residence for the University of the West Indies in Trinidad, port-handling equipment for five harbours and, for several of the smaller islands, schools, warehouses and freshwater supply facilities. Projects under way include an aerial survey of Trinidad, a scheme for the expansion and improvement of Trinidad's dairy herds, the provision of rural schools, teacherages and a sewerage system in Jamaica and a prefabricated fish-packing plant in Guyana, and the construction of a bridge in British Honduras.

A substantial amount of technical assistance has also been given. During the year ended Mar. 31, 1966, training programs were arranged in Canada for 431 students from the Commonwealth Caribbean, the fields of study including agriculture, engineering, fisheries, forestry, medicine and public administration. In addition, 130 Canadians served in the Commonwealth Caribbean, including teachers, soil surveyors, and advisers in the fields of statistics, legal drafting, housing, films, radio broadcasting, postal services, Indian affairs, technical education and harbour management.

**Special Commonwealth African Assistance Plan.**—In the autumn of 1960 the Canadian Government undertook, subject to parliamentary approval, to contribute \$10,500,000 to a Special Commonwealth African Assistance Plan (SCAAP) over a three-year period beginning Apr. 1, 1961. This program arose from discussions at the Meeting of Commonwealth Prime Ministers in 1960. Although entirely a Commonwealth scheme, SCAAP is essentially the counterpart in Africa of the Colombo Plan in Asia. The main donor countries are Britain, Canada, Australia and New Zealand. Some of the newer Commonwealth members, particularly India and Pakistan, have been able to provide limited amounts of technical assistance in fields in which they have experience and specialized knowledge. All Commonwealth countries and dependent territories in Africa qualify for development assistance under the SCAAP program.

As occurred in other areas of Canada's expanding aid program, the level of grant aid to SCAAP increased in 1965-66 to \$9,500,000 from \$6,500,000 in the previous fiscal year and development loan assistance to \$5,000,000 from \$4,500,000. In 1965, the first Canadian development loan in Africa was extended to Nigeria in the amount of \$3,500,000, and early in 1966, two loans totalling \$2,450,000 were granted to Tanzania. A \$2,000,000 food aid grant in the form of wheat flour was made to Ghana.

Technical assistance programs continued to receive major emphasis. During 1965-66, 436 Canadian teachers, professors, and Canadian technical experts were on assignment in Africa while 526 African students received academic and technical training in Canada. This represented a sharp increase in the program of technical assistance from the previous year.

Canadian capital assistance has concentrated on projects assigned a high priority by the recipient country and in which Canada has a high degree of expertise. These included aerial mapping and survey work, forest inventories, pulp and paper survey and forest products development, irrigation and land reclamation, medical training and wheat research, geological surveys and mineral exploration, and the provision of equipment for schools and national parks. A major Canadian-Ghanaian joint effort was the building, equipping and staffing of the Trades Training Centre at Accra at an estimated Canadian cost of \$1,155,000. The institution was formally opened in July 1966. A similar institution is planned for Benin City, Nigeria.

**The Commonwealth Scholarship and Fellowship Plan.**—The proposal to establish a Commonwealth Scholarship and Fellowship Plan was made at the Trade and Economic Conference held at Montreal in September 1958. The Conference envisaged a scheme of 1,000 university scholarships, of which Britain undertook to provide one half and Canada one quarter. The details of the proposed scheme were worked out at the Commonwealth Education Conference at Oxford in 1959. This Plan was designed to enrich the



intellectual life of each country of the Commonwealth by enabling an increased number of its brighter students to share in the wide range of educational resources available throughout the Commonwealth and thus promote the equality of educational opportunity at the highest level. During the academic year 1965-66, there were 222 Commonwealth scholars in Canada; since the Plan first became operational during 1960-61, a total of 563 scholars have come to Canada for advanced study.

In 1965, Research and Visiting Fellowships were introduced as part of the Canadian contribution to this Plan. It is expected that each year three Research Fellowships will be awarded for a full academic year and five Visiting Fellowships for shorter periods. These Fellowships will enable senior educationists from other Commonwealth countries to visit Canadian universities and other educational institutions to carry out investigations, study or research in their particular fields. During the 1965-66 academic year, four Visiting Fellowships and three Research Fellowships were awarded.

**Assistance to French-Speaking States in Africa.**—In April 1961 the Canadian Government announced an offer of assistance in the educational field to the French-speaking states in Africa and subsequently appropriated \$300,000 for this purpose for each of the years ended Mar. 31, 1962, 1963 and 1964. It was decided at the commencement of this program that emphasis should be placed on the provision of Canadian teachers for Africa. For the year ended Mar. 31, 1965, aid was increased and an allocation of \$4,000,000 was provided to allow for development of a capital assistance program as well as expansion of technical assistance. During that year, 67 teachers served in French-speaking Africa and 54 students received training in Canada. Preliminary surveys for bridge construction and hydro-electric development were carried out; an agriculture education survey of six countries was begun; arrangements were made to supply heavy equipment to assist the Republic of Guinea in its roads improvement program; a series of educational films was offered to Cameroon, Central African Republic, Chad, Congo, Dahomey, Morocco, Niger, Togo and Upper Volta; and a contribution of \$500,000 was made to the UN Congo (Leopoldville) Civilian Fund.

In the 1965-66 fiscal year the allocation totalled \$7,500,000—\$5,500,000 in grant funds and \$2,000,000 in development loans. There were 155 teachers on assignments to 16 French-speaking African countries and 97 trainees in Canada. Technical and capital assistance was given to the University of Rwanda; paper for the production of educational literature was supplied to Cameroon, Congo (Leopoldville) and Guinea; film vans and films were made available to Guinea and Gabon; arrangements were made to participate in a livestock improvement program in Cameroon, and a cadastral survey in Morocco; and, as in previous years, \$500,000 was granted to the UN Congo (Leopoldville) Civilian Fund.

**Latin American Program.**—A bilateral Canadian aid program for Latin America was initiated in December 1964, when the Canadian Government concluded an agreement with the Inter-American Development Bank (IADB) by which Canada allocated \$10,000,000 in 'soft' development loan funds for use in high-priority economic, technical and educational projects in Latin America. This initial allocation was augmented in September 1965 with the provision of an additional \$10,000,000 in development loan funds for the area.

Under the terms of the agreement, the IADB selects and processes proposed loan projects before submitting those considered suitable to the Canadian Government for its approval. By mid-1966, two Canadian development loans totalling \$4,500,000 had been made available—the Port Authority of Acapulco, one of the main Pacific seacoast ports of the Central American Republic of El Salvador, was granted an interest-free development loan of \$3,240,000 for the expansion and improvement of port facilities, and Canadian development loan funds of up to \$1,260,000 were made available to the Republic of Ecuador to finance a resources survey of 13,000 sq. miles of agricultural and forest land in that country's Guayas River Valley.

**Co-operation with the United Nations and its Specialized Agencies, and with Other International Aid Programs.**—In addition to the annual contributions made to the United Nations Expanded Programme of Technical Assistance, Canada arranges training programs in Canada for individuals studying under the auspices of the different Specialized Agencies. This service is also extended to the technical assistance program of the International Co-operation Administration of the United States as well as to other international aid organizations. Up to Mar. 31, 1965, more than 2,000 individuals had come to Canada through the various agencies from more than 100 countries in all parts of the world. Assistance is also given by recruiting Canadians for service with the Specialized Agencies on specific technical assistance assignments in under-developed countries.

**External Aid Office.**—As of Nov. 9, 1960, the operation and administration of Canada's external assistance programs became the responsibility of the External Aid Office, established by Order in Council of that date and placed in charge of a Director General.

As mentioned under the separate programs above, additional funds were made available for grant assistance in 1964-65. Canada also introduced a development loan program for which \$50,000,000 was authorized by Parliament on a non-lapsing basis. The terms of the loans are comparable with those of the International Development Association—up to 50 years maturity, non-interest-bearing, ten-year grace period, and 0.75 of 1 p.c. service charge.

Also during 1964-65, Parliament approved for the first time the establishment of a separate food aid program under which the External Aid Office is able to purchase food products to meet part of the Canadian contributions to the FAO World Food Program and to meet the needs of countries requesting this form of Canadian assistance.

### **Subsection 5.—Organization for Economic Co-operation and Development**

The Organization for Economic Co-operation and Development (OECD) was established in October 1961 as successor to the OEEC, with Canada and the United States joining the countries of Western Europe as full members of the new body. Japan, previously a member of the Development Assistance Committee, became, in May 1964, a full member of the OECD and the first member from outside Western Europe or North America.

The prime purpose of the OECD is to promote among member governments co-operation in the fields of economic policy, trade and assistance to developing countries, although it also provides a valuable forum for discussion of common problems in agriculture, industry, finance, technology and manpower policy. In 1963, Ministers approved an annual growth target for member countries for the next seven years of 4 p.c. in real gross national product. Because of its development from the former OEEC, the Organization was at first concerned largely with questions of primarily European interest but, as its membership expanded, it has become increasingly a recognized forum for broader consultation among advanced industrial countries, particularly on questions of economic and financial policy and on the problems of the developing countries. In this latter regard, the OECD now constitutes the main forum for consultations among developed countries concerning the work of the UNCTAD Trade and Development Board, and its committees.

The OECD brings together government officials as well as representatives of private business, labour unions, universities and other non-governmental bodies in both deliberative and consultative capacities, and provides for international liaison among such groups. Within Canada, liaison has been established with the business community through the Canadian Business and Industry Advisory Committee, which was established in 1962 and comprises representatives of the Canadian Chamber of Commerce, the Canadian Council of the International Chamber of Commerce and the Canadian Manufacturers' Association. Parallel arrangements exist for consultation with Canadian labour organizations.

## CHAPTER III.—POPULATION\*

### CONSPECTUS

	PAGE		PAGE
SECTION 1. CENSUS OF POPULATION.....	182	Subsection 7. Ethnic Groups and Birth-places.....	196
Subsection 1. Growth and Movement of Population.....	182	Subsection 8. Religious Denominations....	198
Subsection 2. Density of Population.....	185	Subsection 9. Languages and Mother Tongues.....	199
Subsection 3. Rural and Urban Population	186	Subsection 10. Households and Families...	200
Subsection 4. Populations of Incorporated Cities, Towns and Villages and of Metropolitan Areas.....	187	SECTION 2. INTERCENSAL SURVEYS.....	202
Subsection 5. Sex and Age Distribution....	193	SECTION 3. THE NATIVE PEOPLES OF CANADA	202
Subsection 6. Marital Status.....	196	SECTION 4. STATISTICS OF WORLD POPULATION.....	209

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

### Section 1.—Census of Population

This Section presents only a brief summary of the voluminous data on population recorded by the 1961 Census of Canada, with certain comparable data from earlier censuses. The results of the limited population census taken on June 1, 1966 were not available at the time of preparation but 1966 figures for as many of the tables included in Subsections 1 to 6 and Subsection 10 as are obtainable immediately before this volume goes to press will be presented in Appendix II. The 1966 Census did not include questions on ethnic origin, birthplace, religious denomination, language or mother tongue so that the 1961 data in Subsections 7 to 9 will remain the latest available until the taking of the comprehensive decennial census in 1971.

Detailed census data are published in a series of reports which are obtainable from the Queen's Printer or the Dominion Bureau of Statistics. A list of these publications is available on request from the Information Division of the Dominion Bureau of Statistics.

#### Subsection 1.—Growth and Movement of Population†

**Population Growth.**—Canada's population stood at 18,238,000 in 1961 as against 10,377,000 in 1931 and 5,371,000 in 1901. In the first decade of the century, the gain of 34 p.c. was greater than in any censal period up to 1961. Growth was associated with the opening up of the West for settlement and massive immigration from overseas. During the 1901-11 period, about 1,760,000 immigrants entered the country and natural increase

\* See also Appendix II.

† See footnote on p. 183.





Vancouver today has a population of almost 1,000,000.



The site of Vancouver in 1867 was only a landing place for fur traders and adventurers. By 1888 it had a population of 10,000 and had already been incorporated as a city.



Fort Edmonton on the North Saskatchewan River, about 1870.



Montreal, founded in 1642, became a city in 1832—to its population of about 100,000 in 1867 it has added more than 2,300,000.



St. James Street, Montreal, on a winter afternoon in 1875.



Edmonton became a city in 1904 when it had about 5,000 residents—today its population is close to 400,000.

ONE HUNDRED YEARS, measured against the backdrop of history, is a very short time, but long enough to have seen an unbelievable change in this once vast virgin land of Canada, to have seen its distances and isolations diminished, to have seen its primitive life evolve to sophistication, to have seen great cities established and grow, straining their boundaries, their centres rising skyward in concrete and steel, their people active and prosperous. In the forefront of progress in the past quarter-century, Canada has made tremendous strides in every area—industrial, social and cultural—and, taking advantage of the miracles of modern man's devising, moves forward still with increasing speed. It is difficult now to think that one hundred years ago only a handful of buildings lined a remote western bay where now stands the centre of the great metropolis of Vancouver; that a wooden fort overlooking the North Saskatchewan River marked the site of the now burgeoning city of Edmonton, oil centre of the mid-West; that Montreal, with its then 200-year history and its population of 100,000, was Canada's largest city, destined to become one of the major commercial and industrial cities of the world, harbouring close to 2,500,000 people living very much at 20th century tempo; that other small settlements and uninhabited sites would come to take their places in the chain of booming cities and industrial towns across this great land.

amounted to an estimated 1,000,000. As the total increase in population was 1,835,328, it is evident that there was substantial emigration during the period. In the 1911-21 period, population growth dropped to 22 p.c. Military losses in the First World War and losses during the influenza epidemic, which together amounted to about 120,000, were a factor in this decline. Although the flow of immigrants was reduced during the war years, it had been very heavy immediately preceding the War, so that the total number for the period (1,612,000) was very close to that for the previous censal period. However, emigration was also extremely high and the increase in population amounted to 1,581,306, representing 2 p.c. per annum compared with 3 p.c. in the 1901-11 period.

In the decade 1921-31, the rate of increase dropped to 18 p.c. Immigration fell to 1,200,000 and emigration was estimated at 1,000,000. Thus the increase in population, which amounted to 1,588,837, was only 229,000 greater than the natural increase. A feature of this period was the rapid growth of population in Western Canada, partly the result of immigration and partly the result of an influx of people from Eastern Canada. During 1931-41, the population increase was just under 11 p.c. During the depressed conditions of the 1930's, marriage and birth rates were significantly lower and only 150,000 immigrants came to Canada, although, in addition, 75,000 Canadians returned from the United States. Emigration was also much lower than in the previous decades, amounting to an estimated 250,000. Natural increase was only 1,220,000, the crude birth rate falling from 27 per thousand of the population in the 1921-25 period to 24 per thousand in the succeeding five-year period and to 20 per thousand during much of the 1931-41 decade. During 1941-51, population growth was restored to pre-depression levels. Excluding Newfoundland which became part of Canada in 1949, it amounted to 19 p.c.; including Newfoundland it was 22 p.c. Much of the increase took place in the second half of the decade, reflecting heavy postwar immigration and a sharp rise in the marriage and birth rates.

In the 1951-61 period, the population growth rate at 30 p.c. came close to approaching the extremely high rate of the first decade of the century. However, the two periods contrast in many ways. In the early period there was a wider dispersal of population increases as whole regions across the Continent were opened up; in the recent period there was a concentration of growth in urban communities although some spreading of population into newly developed northern areas took place. Natural increase accounted for about 75 p.c. of the growth. Although there was some decline in the death rate, the trend of natural increase reflected very closely that of the crude birth rate which began to rise during the War and remained high throughout the period. Net immigration accounted for the remainder of the increase; during the decade, 1,542,853 immigrants entered the country, more than double the estimated emigration. Although all provinces gained in population during 1951-61, the rates of increase varied widely. The greatest increases resulted from a combination of natural increase and net migration which in the two large provinces of Central Canada and the two most westerly provinces accounted for over 87 p.c. of the total actual increase. In contrast, increases in the other six provinces were entirely accounted for by natural increase.\*

\* An outline of growth in the 1961-66 period, based on the results of the 1966 Census, is included in Appendix II. An outline of the growth of population in Canada since the beginning of the seventeenth century may be found in Vol. I of the 1931 Census. Other accounts of population growth prior to the present century are included in Vol. I of the 1941 Census and Vol. X of the 1951 Census.



# 1.—Numerical Distribution of Population by Province, and Percentage Change from Preceding Census, Decennial Census Years 1901-61

NOTE.—Populations for the decennial census years 1871, 1881 and 1891 are given in the 1956 Year Book, p. 149. The populations of the Prairie Provinces in 1906, 1916, 1926, 1936 and 1946 will be found in the 1951 edition, p. 131, and census populations for 1956 in the 1961 edition, p. 146.

Province or Territory	1901	1911	1921	1931	1941	1951	1961
NUMERICAL DISTRIBUTION							
Nfld.....	1	1	1	1	1	361,416	457,853
P.E.I.....	103,259	93,728	88,615	88,038	95,047	98,429	104,629
N.S.....	459,574	492,338	523,837	512,846	577,962	642,584	737,007
N.B.....	331,120	351,889	387,876	408,219	457,401	515,697	597,936
Que.....	1,648,898	2,005,776	2,360,510	2,874,662	3,331,882	4,055,681	5,259,211
Ont.....	2,182,947	2,527,292	2,933,662	3,431,683	3,787,655	4,597,542	6,236,092
Man.....	255,211	461,394	610,118	700,139	729,744	776,541	921,686
Sask.....	91,279	492,432	757,510	921,785	895,992	831,728	925,181
Alta.....	73,022	374,295	588,454	731,605	796,169	939,501	1,331,944
B.C.....	178,657	392,480	524,582	694,263	817,861	1,165,210	1,629,082
Y.T.....	27,219	8,512	4,157	4,230	4,914	9,096	14,628
N.W.T.....	20,129	6,507	8,143	9,316	12,028	16,004	22,998
Canada.....	5,371,315	7,206,643	8,787,949 <sup>2</sup>	10,376,786	11,506,655	14,009,429	18,238,247
PERCENTAGE CHANGE FROM PRECEDING CENSUS							
Nfld.....	1	1	1	1	1	1	26.7
P.E.I.....	-5.3	-9.2	-5.5	-0.7	8.0	3.6	6.3
N.S.....	2.0	7.1	6.4	-2.1	12.7	11.2	14.7
N.B.....	3.1	6.3	10.2	5.2	12.0	12.7	15.9
Que.....	10.8	21.6	17.7	21.8	15.9	21.7	29.7
Ont.....	3.2	15.8	16.1	17.0	10.4	21.4	35.6
Man.....	67.3	80.8	32.2	14.8	4.2	6.4	18.7
Sask.....	—	439.5	53.8	21.7	-2.8	-7.2	11.2
Alta.....	—	412.6	57.2	24.3	8.8	18.0	41.8
B.C.....	82.0	119.7	33.7	32.3	17.8	42.5	39.8
Y.T.....	—	-68.7	-51.2	1.8	16.2	85.1	60.8
N.W.T.....	-79.7	-67.7	25.1	14.4	29.1	33.1	43.7
Canada.....	11.1	34.2	21.9	18.1	10.9	21.8	30.2

<sup>1</sup> Populations of Newfoundland (not part of Canada until 1949) were: 1901, 220,984; 1911, 242,619; 1921, 263,033; 1931, 281,500 (estimated); 1941, 303,300 (estimated); and 1945, 321,819.

<sup>2</sup> Includes 485 members of the Royal Canadian Navy recorded separately in 1921.

## 2.—Factors in the Growth of Population, 1951-61

Province or Territory	Population 1951 Census	Births	Deaths	Natural Increase	Immigration	Actual Increase	Net Migration	Population 1961 Census
	No.	No.	No.	No.	No.	No.	No.	No.
Nfld.....	361,416	141,165	30,169	110,996	4,200	96,437	-14,559	457,853
P.E.I.....	98,429	26,990	9,369	17,621	1,451	6,200	-11,421	104,629
N.S.....	642,584	187,571	59,278	128,293	19,148	94,423	-33,870	737,007
N.B.....	515,697	165,299	45,838	119,461	9,718	82,239	-37,222	597,936
Que.....	4,055,681	1,348,440	350,140	998,300	325,329	1,203,530	205,230	5,259,211
Ont.....	4,597,542	1,426,211	472,718	953,493	817,292	1,638,550	685,057	6,236,092
Man.....	776,541	220,016	70,326	149,690	66,344	145,145	-4,545	921,686
Sask.....	831,728	238,998	66,674	172,324	30,715	93,453	-78,871	925,181
Alta.....	939,501	345,025	79,830	265,195	112,520	392,443	127,248	1,331,944
B.C.....	1,165,210	355,736	131,945	223,791	155,052	463,872	240,081	1,629,082
Y.T. and N.W.T.	25,100	12,889	3,855	9,034	1,084	12,526	3,492	37,626
Canada.....	14,009,429	4,468,340	1,320,142	3,148,198	1,542,853	4,228,518	1,080,620	18,238,247

Table 3 shows the natural increase and the total population increase for Canada and the provinces in the periods 1941-51, 1951-56 and 1956-61. The balance between the total increase in population and the natural increase during a period represents the difference between inward and outward movements, i.e., net migration. The net migration data shown for provinces indicate the net movement of population arising partly from interchange of population between provinces and partly from persons entering and leaving the country.

**3.—Numerical Changes in the Population of the Provinces through Natural Increase and Migration 1941-51, 1951-56 and 1956-61**

Province	Natural Increase			Population Increase according to Census			Net Migration		
	1941-51	1951-56	1956-61	1941-51	1951-56	1956-61	1941-51	1951-56	1956-61
Nfld.....	...	51,851	59,145	...	53,658	42,779	...	+1,807	-16,366
P.E.I.....	15,802	8,959	8,662	3,382	856	5,344	-12,420	-8,103	-3,318
N.S.....	103,512	63,133	65,160	64,622	52,133	42,290	-38,890	-11,000	-22,870
N.B.....	99,904	59,774	59,687	58,296	38,919	43,320	-41,608	-20,855	-16,367
Que.....	736,058	476,627	521,673	723,799	572,697	630,833	-12,259	+96,070	+109,160
Ont.....	505,034	430,386	523,107	809,887	807,391	831,159	+304,853	+377,005	+308,052
Man.....	107,510	73,684	76,006	46,797	73,499	71,646	-60,713	-185	-4,360
Sask.....	135,106	86,030	86,294	-64,264	48,937	44,516	-199,370	-37,093	-41,778
Alta.....	150,303	120,961	144,234	143,332	183,615	208,828	-6,971	+62,654	+64,594
B.C.....	116,527	98,206	125,585	347,349	233,254	230,618	+230,822	+135,048	+105,033
<b>Canada<sup>1</sup>....</b>	<b>1,972,394</b>	<b>1,473,211</b>	<b>1,674,987</b>	<b>2,141,358</b>	<b>2,071,362</b>	<b>2,157,456</b>	<b>+168,964</b>	<b>+598,151</b>	<b>+482,469</b>

<sup>1</sup> Includes the Yukon and Northwest Territories.

The earlier movement of population in Canada from east to west has not been apparent since the 1920s. Although British Columbia has continued to show population gains from migration since 1931, much of this gain has been at the expense of the Prairie Provinces. Although the three Prairie Provinces lost by migration about 267,000 persons between 1941 and 1951, they gained 25,000 in the period 1951-56 and 18,000 in the period 1956-61. Manitoba lost almost 61,000 people between 1941 and 1951 but only 5,000 persons since then. Saskatchewan has been a consistent loser since 1941, losing on the average almost 20,000 a year during the 1940s and around 8,000 a year during the 1950s. Alberta lost only about 7,000 in the decade 1941-51 and gained close to 65,000 in each of the five-year periods 1951-56 and 1956-61. British Columbia gained through migration at the rate of about 23,000 a year during the 1940s, about 27,000 a year in the first half of the 1950s and 21,000 annually in the 1956-61 period. On an absolute basis, Ontario received more people through migration than did British Columbia but, in relation to its larger population, the gain was only about one third as important. Most of Ontario's growth through migration was from immigration rather than interprovincial movement of population. Quebec had a slight loss between 1941 and 1951 and a considerable gain in the next ten years, due also to immigration. The Maritimes as a whole lost 175,000 persons over the quarter-century.

### Subsection 2.—Density of Population

Table 4 shows the density of population in the different provinces and territories of Canada in the census years 1951, 1956 and 1961. Omitting the Yukon and Northwest Territories where population density is exceedingly low, there were 8.66 persons per square mile in Canada as a whole in 1961 compared with 6.65 per square mile in 1951. The greatest increase in the ten years was shown by Ontario where there were 4.76 more persons per square mile, followed by Nova Scotia with an increase of 4.62. However, it should be remembered that all provinces with the exception of the Maritimes have large areas almost devoid of population and that concentrations in other areas are very high.

## 4.—Land Area and Density of Population, by Province, Census Years 1951, 1956 and 1961

Province or Territory	Land Area	Population 1951		Population 1956		Population 1961	
		Total	Per Sq. Mile	Total	Per Sq. Mile	Total	Per Sq. Mile
	sq. miles	No.	No.	No.	No.	No.	No.
Newfoundland (incl. Labrador).....	143,045	361,416	2.53	415,074	2.90	457,853	3.20
Prince Edward Island.....	2,184	98,429	45.07	99,285	45.46	104,629	47.91
Nova Scotia.....	20,402	642,584	31.50	694,717	34.05	737,007	36.12
New Brunswick.....	27,835	515,697	18.53	554,616	19.93	597,936	21.48
Quebec.....	523,860	4,055,681	7.74	4,623,378	8.84	5,259,211	10.04
Ontario.....	344,092	4,597,542	13.36	5,404,933	15.71	6,236,092	18.12
Manitoba.....	211,775	776,541	3.67	850,040	4.01	921,686	4.35
Saskatchewan.....	220,182	831,728	3.78	880,665	4.00	925,181	4.20
Alberta.....	248,800	939,501	3.78	1,123,116	4.51	1,331,944	5.35
British Columbia.....	359,279	1,165,210	3.24	1,398,464	3.89	1,629,082	4.53
<b>Canada (Exclusive of the Territories).....</b>	<b>2,101,454</b>	<b>13,984,329</b>	<b>6.65</b>	<b>16,049,288</b>	<b>7.64</b>	<b>18,200,621</b>	<b>8.66</b>
Yukon Territory.....	205,346	9,096	0.04	12,190	0.06	14,628	0.07
Northwest Territories.....	1,253,438	16,004	0.01	19,313	0.02	22,998	0.02
<b>Canada.....</b>	<b>3,560,238</b>	<b>14,009,429</b>	<b>3.93</b>	<b>16,080,791</b>	<b>4.52</b>	<b>18,238,247</b>	<b>5.12</b>

The density of each county and census division is given in DBS Census Report 1.1-11 (Catalogue No. 92-540); the density in each of the five largest metropolitan areas in 1951 and 1961 was as follows:—

Metropolitan Area	1951		1961	
	Population	Density per Sq. Mile	Population	Density per Sq. Mile
	No.	No.	No.	No.
Montreal—				
City proper.....	1,021,520	20,268	1,191,062	25,256
Fringe area.....	450,331	2,754	918,447	2,057
Toronto—				
City proper.....	675,754	19,374	672,407	19,234
Fringe area.....	534,599	2,583	1,152,074	1,493
Vancouver—				
City proper.....	344,833	7,891	384,522	8,298
Fringe area.....	217,127	767	405,643	872
Winnipeg—				
City proper.....	235,710	9,428	265,429	10,803
Fringe area.....	121,103	645	210,560	879
Ottawa—				
City proper.....	202,045	4,446	268,206	5,902
Fringe area.....	90,431	2,475	161,544	558

## Subsection 3.—Rural and Urban Population

For the 1961 Census, all cities, towns and villages of 1,000 or more population, whether incorporated or not, were classed as urban; also classed as urban were the urbanized fringes of census metropolitan and other large urban areas, and the urbanized fringes of certain smaller cities where the city and fringe totalled 10,000 or more persons. The remainder of the population was classed as rural.

Table 5 classifies the 1961 rural population according to farm and non-farm residence and the urban population by size groups; in the latter classification, each municipality (or part) in an urbanized area is allocated to the same size group as the total urbanized area of which it forms a part. The figures show that, in 1961, almost 70 p.c. of Canada's population were urban dwellers and 53 p.c. lived in or on the fringes of urban centres having a population of 30,000 or more. Only about 12 p.c. lived on farms.



**5.—Rural Population classified as Farm and Non-farm, and Urban Population classified by Size Group, by Province, Census 1961**

Province or Territory	Rural			Urban				
	Farm <sup>1</sup>	Non-farm	Total	1,000 to 9,999	10,000 to 29,999	30,000 to 99,999	100,000 or Over	Total
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	9,077	216,756	225,833	98,614	48,214	85,192	—	232,020
Prince Edward Island.....	34,514	36,206	70,720	15,591	18,318	—	—	33,909
Nova Scotia.....	56,832	279,663	336,495	75,163	49,065	—	276,284	400,512
New Brunswick.....	62,265	257,658	319,923	80,287	61,815	135,911	—	278,013
Quebec.....	564,826	787,981	1,352,807	606,355	277,549	384,628	2,637,872	3,906,404
Ontario.....	505,699	906,864	1,412,563	631,870	297,834	934,870	2,958,955	4,822,529
Manitoba.....	171,472	161,407	332,879	71,995	51,100	—	465,712	588,807
Saskatchewan.....	304,672	222,418	527,090	109,076	48,142	128,732	112,141	398,091
Alberta.....	285,823	202,910	488,733	158,319	44,096	35,454	605,342	843,211
British Columbia.....	77,540	369,617	447,157	161,256	152,978	—	867,691	1,181,925
Yukon Territory.....	47	9,550	9,597	5,031	—	—	—	5,031
Northwest Territories.....	18	14,042	14,060	8,938	—	—	—	8,938
<b>Canada.....</b>	<b>2,072,785</b>	<b>3,465,072</b>	<b>5,537,857</b>	<b>2,022,495</b>	<b>1,049,111</b>	<b>1,704,787</b>	<b>7,923,997</b>	<b>12,700,390</b>

<sup>1</sup> Excludes 55,615 persons living on farms in localities classed as urban.

**Subsection 4.—Populations of Incorporated Cities, Towns and Villages and of Metropolitan Areas**

The population of all incorporated cities, towns and villages is classified by size group in Table 6 for the census years 1951, 1956 and 1961. During the ten-year period, the number of such centres increased by 178 and the proportion of the total population living in them rose from 56.7 p.c. to 60.7 p.c. Although there was a slight decrease in the number of centres having fewer than 1,000 persons, the number with over 50,000 increased from 19 to 29 and the proportion of the total population in these larger centres went up from 27.5 p.c. to 29.0 p.c.; the proportion in centres of from 1,000 to 50,000 increased from 26.1 p.c. to 29.3 p.c. in the same comparison.

**6.—Populations of Incorporated Cities, Towns and Villages, classified by Size Group, Census Years 1951, 1956 and 1961**

Size Group	1951			1956			1961		
	Incorporated Centres	Population	P.C. of Total Population	Incorporated Centres	Population	P.C. of Total Population	Incorporated Centres	Population	P.C. of Total Population
	No.	No.		No.	No.		No.	No.	
Over 500,000.....	2	1,697,274	12.1	2	1,777,145	11.1	2	1,863,469	10.2
Between—									
400,000 and 500,000..	—	—	—	—	—	—	—	—	—
300,000 and 400,000..	1	344,833	2.5	1	365,844	2.3	1	384,522	2.1
200,000 and 300,000..	3	646,076	4.6	4	942,849	5.9	5	1,338,294	7.3
100,000 and 200,000..	4	572,756	4.1	4	576,156	3.6	4	568,056	3.1
50,000 and 100,000..	9	588,436	4.2	12	769,323	4.8	17	1,134,214	6.2
25,000 and 50,000..	24	802,380	5.7	27	929,624	5.8	41	1,431,909	7.9
15,000 and 25,000..	34	636,713	4.5	43	853,341	5.3	43	862,101	4.7
10,000 and 15,000..	29	347,410	2.5	44	527,802	3.3	61	743,474	4.1
5,000 and 10,000..	100	720,077	5.1	117	830,299	5.2	132	932,936	5.1
3,000 and 5,000..	119	457,492	3.3	130	497,818	3.1	151	579,201	3.2
1,000 and 3,000..	409	698,092	5.0	450	772,013	4.8	465	793,465	4.4
Under 1,000.....	1,049	429,683	3.1	1,039	443,922	2.8	1,039	437,207	2.4
<b>Totals.....</b>	<b>1,783</b>	<b>7,941,222</b>	<b>56.7</b>	<b>1,873</b>	<b>9,286,126</b>	<b>57.7</b>	<b>1,961</b>	<b>11,068,848</b>	<b>60.7</b>

The Canadian cities having a population of over 50,000 in 1961 are listed in Table 7. Included also are the years of their incorporation as cities and comparative figures for 1951 and 1956 which are given according to the city boundaries at these respective dates.

### 7.—Incorporated Cities with Populations of Over 50,000 at the 1961 Census, with Comparable Data for 1951 and 1956

NOTE.—The asterisk (\*) indicates a boundary change since the preceding census. Population totals are based on areas as incorporated at each of these dates.

City and Province	Year of Incorporation as City	1951	1956	1961
		No.	No.	No.
Brantford, Ont.....	1877	36,727	51,869*	55,201*
Calgary, Alta.....	1893	129,060	181,780*	249,641*
Edmonton, Alta.....	1904	159,631	226,002*	281,027*
Halifax, N.S.....	1841	85,589	93,301	92,511
Hamilton, Ont.....	1846	205,321	239,625*	273,991*
Hull, Que.....	1875	43,483	49,243*	56,929*
Kingston, Ont.....	1846	33,459	48,618*	53,526
Kitchener, Ont.....	1912	44,867	59,562*	74,485*
London, Ont.....	1855	95,343	101,693*	169,569*
Montreal, Que.....	1832	1,021,520	1,109,439*	1,191,062*
Oshawa, Ont.....	1924	41,545	50,412	62,415
Ottawa, Ont.....	1855	202,045	222,129	268,206
Quebec, Que.....	1832	164,016	170,703	171,979
Regina, Sask.....	1903	71,319	89,755*	112,141*
Saint John, N.B.....	1785	50,779	52,491	55,153
St. Catharines, Ont.....	1876	37,984	39,708*	84,472*
St. John's, Nfld.....	1888	52,873	57,078	63,633
St. Michel, Que.....	1952	10,539	24,706	55,978
Sarnia, Ont.....	1914	34,697	43,447	50,976
Saskatoon, Sask.....	1906	53,268	72,858*	95,526*
Sherbrooke, Que.....	1875	50,543	58,668*	66,554
Sudbury, Ont.....	1930	42,410	46,482	80,120*
Toronto, Ont.....	1834	675,754	667,706*	672,407
Trois-Rivières, Que.....	1857	46,074	50,483*	53,477*
Vancouver, B.C.....	1886	344,833	365,844*	384,522
Verdun, Que.....	1912	77,391	78,262*	78,317
Victoria, B.C.....	1862	51,331	54,584	54,941
Windsor, Ont.....	1892	120,049	121,980	114,367*
Winnipeg, Man.....	1873	235,710	255,093*	265,429

Census metropolitan areas have been established for groups of urban communities that are in close economic, geographic and social relationship. Table 8 shows the 1961 population of each area with the corresponding 1951 and 1956 figures for the same area as in 1961. As indicated by the last column, most of these metropolitan areas have shown remarkable increases in population during the decade. In 1961 they accounted for 44.8 p.c. of the total population as compared with 40.2 p.c. in 1951.

### 8.—Populations of Census Metropolitan Areas, 1951, 1956 and 1961

(Areas as of 1961)

Census Metropolitan Area	1951	1956	1961	P.C. Increase 1951-61
	No.	No.	No.	
Calgary, Alta.....	142,315	201,022	279,062	96.1
Edmonton, Alta.....	176,782	254,800	337,568	91.0
Halifax, N.S.....	133,931	164,200	183,946	37.3
Hamilton, Ont.....	280,293	338,294	395,189	41.0
Kitchener, Ont.....	107,474	128,722	154,864	44.1
London, Ont.....	128,977	154,453	181,283	40.6
Montreal, Que.....	1,471,851	1,745,001	2,109,509	43.3
Ottawa, Ont.....	292,476	345,460	429,750	46.9
Quebec, Que.....	276,242	311,604	357,568	29.4
Saint John, N.B.....	73,337	86,015	95,563	22.0
St. John's, Nfld.....	68,620	79,153	90,838	32.4
Sudbury, Ont.....	73,826	97,945	110,694	49.9
Toronto, Ont.....	1,210,353	1,502,253	1,824,481	50.7
Vancouver, B.C.....	561,960	665,017	790,165	40.6
Victoria, B.C.....	113,207	133,829	154,152	36.2
Windsor, Ont.....	163,618	185,865	193,365	18.2
Winnipeg, Man.....	356,813	412,248	475,989	33.4

**9.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over,  
by Province, Census 1961**

NOTE.—Urban centres are designated in this table by the following abbreviations: c.=city, t.=town, and v.=village.

Province and Incorporated Centre	Popu- lation 1961 Census	Province and Incorporated Centre	Popu- lation 1961 Census	Province and Incorporated Centre	Popu- lation 1961 Census
No.			No.		No.
<b>Newfoundland—</b>		<b>Nova Scotia—concluded</b>		<b>Quebec—continued</b>	
Bay Roberts, t.,	1,328	Lunenburg, t.,	3,056	Asbestos, t.,	11,083
Botwood, t.,	3,680	Mahone Bay, t.,	1,103	Auteuil, t.,	2,603
Burgeo, t.,	1,454	Middleton, t.,	1,921	Ayersville, v.,	2,956
Burin, t.,	1,144	Mulgrave, t.,	1,145	Aylmer, t.,	6,286
Carbonear, t.,	4,234	New Glasgow, t.,	9,782	Bagotville, t.,	5,629
Catalina, t.,	1,110	New Waterford, t.,	10,592	Baie Comeau, t.,	7,956
Channel—		North Sydney, t.,	8,657	Baie de Shawinigan, v.,	1,085
Port aux Basques, t.,	4,141	Oxford, t.,	1,471	Baie d'Urfé, t.,	3,549
Clarenville, t.,	1,541	Parrsboro, t.,	1,834	Baie St. Paul, v.,	4,674
Corner Brook, c.,	25,185	Pictou, t.,	4,534	Barraute, v.,	1,199
Deer Lake, t.,	3,998	Port Hawkesbury, t.,	1,346	Beaconsfield, t.,	10,064
Fogo, t.,	1,152	Shelburne, t.,	2,408	Beauceville, t.,	1,645
Fortune, t.,	1,360	Springhill, t.,	5,836	Beauceville E., t.,	1,920
Freshwater, t.,	1,396	Stellarton, t.,	5,327	Beauharnois, c.,	8,704
Gander, t.,	5,725	Stewiacke, t.,	1,042	Beauport, t.,	9,192
Glovertown, t.,	1,197	Sydney, c.,	33,617	Beaupré, v.,	2,587
Grand Bank, t.,	2,703	Sydney Mines, t.,	9,122	Bedford, t.,	2,855
Harbour Breton, t.,	1,076	Trenton, t.,	3,140	Beebe Plain, v.,	1,363
Harbour Grace, t.,	2,650	Truro, t.,	12,421	Beloil, t.,	6,283
Lewisporte, t.,	2,702	Westville, t.,	4,159	Bernierville, v.,	2,706
Marystown, t.,	1,691	Windsor, t.,	3,823	Berthierville, t.,	3,708
Mount Pearl, t.,	2,785	Wolfville, t.,	2,413	Bic, v.,	1,177
Placentia, t.,	1,610	Yarmouth, t.,	8,636	Black Lake, t.,	4,180
St. Anthony, t.,	1,820			Bois des Filon, v.,	2,499
St. John's, c.,	63,633			Boucherville, t.,	7,403
St. Lawrence, t.,	2,095	<b>New Brunswick—</b>		Boulamaque, t.,	3,344
Stephenville, t.,	6,043	Bathurst, t.,	5,494	Bromptonville, t.,	2,726
Stephenville Crossing, t.,	2,209	Campbellton, c.,	9,873	Brossard, t.,	3,778
Wabana, t.,	8,026	Chatham, t.,	7,109	Brownburg, v.,	3,617
Wesleyville, t.,	1,285	Dalhousie, t.,	5,856	Buckingham, t.,	7,421
Windsor, t.,	5,505	Dieppe, t.,	4,032	Cabano, v.,	2,695
		Edmundston, c.,	12,791	Cadillac, t.,	1,077
		Fredericton, c.,	10,683	Campbell's Bay, v.,	1,024
		Grand Falls, t.,	3,983	Candiac, t.,	1,050
		Hartland, t.,	1,025	Cap Chat, v.,	2,035
<b>Prince Edward Island—</b>		Lancaster, c.,	13,848	Cap de la Madeleine, c.,	26,925
Charlottetown, c.,	18,318	Marysville, t.,	3,233	Causapsal, v.,	3,463
Montague, t.,	1,126	Milltown, t.,	1,892	Chambly, t.,	3,737
Parkdale, v.,	1,735	Moncton, c.,	43,840	Chambord, v.,	1,188
St. Eleanor, v.,	1,002	Newcastle, t.,	5,236	Chandler, t.,	3,406
Sherwood, v.,	1,580	Oromocto, t.,	12,170	Chapais, t.,	2,863
Souris, t.,	1,537	St. Andrews, t.,	1,531	Charlemagne, v.,	3,068
Summerside, t.,	8,611	St. George, t.,	1,133	Charlesbourg, c.,	14,308
		Saint John, c.,	55,153	Charny, v.,	4,189
<b>Nova Scotia—</b>		St. Leonard, t.,	1,666	Château d'Eau, t.,	1,057
Amherst, t.,	10,788	St. Stephen, t.,	3,380	Châteauguay, t.,	7,570
Antigonish, t.,	4,344	Sackville, t.,	3,038	Châteauguay Centre, t.,	7,591
Berwick, t.,	1,282	Shediac, t.,	2,159	Châteauguay Heights, t.,	1,231
Bridgetown, t.,	1,043	Shippegan, t.,	1,631	Chibougamau, t.,	4,765
Bridgewater, t.,	4,497	Sussex, t.,	3,457	Chicoutimi, c.,	31,657
Canso, t.,	1,151	Woodstock, t.,	4,305	Chicoutimi N., c.,	11,229
Dartmouth, c.,	46,966			Chomedey, c.,	30,445
Digby, t.,	2,308			Chute aux Outardes, v.,	1,336
Dominion, t.,	2,999			Clermont, v.,	3,114
Glace Bay, t.,	24,186	<b>Quebec—</b>		Coaticook, t.,	6,906
Halifax, c.,	92,511	Acton Vale, t.,	3,957	Contrecoeur, v.,	2,007
Hantsport, t.,	1,381	Alma, c.,	13,309	Cookshire, t.,	1,412
Inverness, t.,	2,109	Amos, t.,	6,080	Côte St. Luc, c.,	13,266
Kentville, t.,	4,612	Amqui, v.,	3,659	Courville, t.,	4,670
Liverpool, t.,	3,712	Anjou, t.,	9,511	Cowansville, t.,	7,050
Lockeport, t.,	1,231	Arthabaska, t.,	2,977	Crabtree, v.,	1,811
Louisburg, t.,	1,417	Arvida, c.,	14,460		



**9.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over,  
by Province, Census 1961—continued**

Province and Incorporated Centre	Popu- lation 1961 Census	Province and Incorporated Centre	Popu- lation 1961 Census	Province and Incorporated Centre	Popu- lation 1961 Census
No.		No.		No.	
<b>Quebec—continued</b>		<b>Quebec—continued</b>		<b>Quebec—continued</b>	
Danville, t.....	2,562	La Tuque, t.....	13,023	Port Alfred, t.....	9,066
Delson, t.....	2,075	Laurentides, t.....	1,698	Port Cartier, t.....	3,458
Desbiens, t.....	1,970	Lauson, c.....	11,533	Préville, t.....	1,001
Deschailions sur St.		Laval des Rapides, t....	19,227	Price, v.....	3,094
Laurent, v.....	1,283	Laval W., t.....	5,440	Princeville, v.....	3,174
Deschambault, v.....	1,056	Lavaltrie, v.....	1,034	Quebec, c.....	171,979
Deschênes, v.....	2,090	LeMoyné, t.....	8,057	Quebec W., t.....	8,733
Disraeli, v.....	3,079	Lennoxville, t.....	3,699	Rawdon, v.....	2,388
Dolbeau, t.....	6,052	L'Epiphanie, v.....	2,663	Repentigny, t.....	9,139
Dollard des Ormeaux, t..	1,248	Léry, t.....	1,957	Richelieu, v.....	1,612
Donnacoona, t.....	4,812	Les Saules, t.....	4,098	Richmond, t.....	4,072
Dorion, t.....	4,996	Lévis, c.....	15,112	Rigaud, t.....	1,990
Dorval, c.....	18,592	Limière, v.....	1,269	Rimouski, t.....	17,739
Drummondville, c.....	27,909	L'Isletville, v.....	1,184	Rimouski E., v.....	1,581
Drummondville W., v.....	2,057	L'Isle Verte, v.....	1,517	Rivière des Prairies, t..	10,054
Duvernay, t.....	10,939	Longueuil, c.....	24,131	Rivière du Loup, c.....	10,835
East Angus, t.....	4,756	Loretteville, t.....	6,522	Rivière du Moulin, v....	4,386
East Broughton		Louiseville, t.....	4,138	Robertsonville, v.....	1,156
Station, v.....	1,136	Luceville, v.....	1,419	Roberval, c.....	7,739
Fabreville, t.....	5,213	Macamic, t.....	1,614	Rock Island, t.....	1,608
Farnham, c.....	6,354	Magog, c.....	13,139	Rosemere, t.....	6,158
Ferme Neuve, v.....	1,971	Malartic, t.....	6,998	Rouyn, c.....	18,716
Forestville, t.....	1,529	Maniwaki, t.....	6,349	Roxboro, t.....	6,298
Fort Chambly, t.....	1,987	Maple Grove, t.....	1,412	Ste. Adèle, v.....	1,331
Fort Coulonge, v.....	1,823	Marieville, t.....	3,809	Ste. Agatheville, v.....	1,117
Gagnon, t.....	1,900	Masson, v.....	1,933	Ste. Agathe des	
Gaspé, t.....	2,603	Matane, t.....	9,190	Monts, t.....	5,725
Gatineau, t.....	13,022	McMasterville, v.....	2,075	St. Ambroise, v.....	1,576
Giffard, c.....	10,129	Melocheville, v.....	1,666	St. André Avelin, v....	1,066
Granby, c.....	31,463	Missassin, t.....	3,461	St. André E., v.....	1,183
Grande Rivière, v.....	1,176	Montebello, v.....	1,486	Ste. Anne de Beauré, v..	1,878
Grand'Mère, c.....	15,806	Mont Joli, t.....	6,178	Ste. Anne de Bellevue, t.	4,044
Greenfield Park, t.....	7,807	Mont Laurier, t.....	5,859	Ste. Anne de la	
Grenville, v.....	1,330	Montmagny, t.....	6,850	Pocatière, v.....	3,086
Hampstead, t.....	4,557	Montmorency, t.....	5,985	St. Anselme, v.....	1,131
Hauterive, t.....	5,980	Montreal, c.....	1,191,062	St. Antoine des	
Hébertville Station, v..	1,257	Montreal E., t.....	5,884	Laurentides, v.....	3,005
Hudson, v.....	1,671	Montreal N., c.....	48,433	St. Basile S., v.....	1,709
Hudson Heights, v.....	1,540	Montreal W., t.....	6,446	St. Bruno, v.....	1,158
Hull, c.....	56,929	Mount Royal, t.....	21,182	St. Bruno de	
Huntingdon, t.....	3,134	Murdochville, t.....	2,951	Montarville, t.....	6,760
Iberville, t.....	7,588	Napierville, v.....	1,812	St. Casimir, v.....	1,386
Ile Perrot, t.....	3,106	Naudville, t.....	4,475	St. Césaire, v.....	2,097
Isle Malgine, t.....	2,070	Nicolet, t.....	4,441	St. Coeur de Marie, v..	1,302
Jacques Cartier, c.....	40,807	Noranda, c.....	11,477	Ste. Croix, v.....	1,363
Joliette, c.....	18,088	Normandin, v.....	1,838	St. Cyrille, v.....	1,138
Jonquière, c.....	28,588	Notre Dame de		St. Denis, v.....	1,063
Kénogami, c.....	11,816	Lorette, v.....	3,961	Ste. Dorothee, t.....	5,297
Knowlton, v.....	1,396	Notre Dame		St. Elzéar, t.....	4,150
Labelle, v.....	1,224	d'Hébertville, v.....	1,604	St. Émile, v.....	1,806
Lac au Saumon, v.....	1,548	Notre Dame de		St. Eustache, t.....	5,463
Lac Etchemin, v.....	2,297	Portneuf, v.....	1,380	St. Eustache sur le	
Lachine, c.....	38,630	Notre Dame du Lac, v..	1,695	Lac, t.....	7,274
Lachute, t.....	7,560	Omerville, v.....	1,094	St. Félixien, t.....	5,133
Lac Mégantic, t.....	7,015	Ormstown, v.....	1,527	Ste. Félicité, v.....	1,057
Lacolle, v.....	1,187	Oursainville, c.....	4,236	St. Félix de Valois, v..	1,399
Lafèche, c.....	10,984	Outremont, c.....	30,753	Ste. Foy, c.....	29,716
Lafontaine, v.....	1,556	Papineauville, v.....	1,300	St. François, t.....	5,122
La Guadeloupe, v.....	1,728	Parent, v.....	1,298	St. Fulgence, v.....	1,094
La Malbaie, t.....	2,580	Pierrefonds, t.....	12,171	St. Gabriel de	
L'Annonciation, v.....	1,042	Pierreville, v.....	1,559	Brandon, v.....	3,425
La Pérade, v.....	1,184	Pincourt, t.....	2,685	Ste. Geneviève, t.....	2,397
La Petite Rivière, t....	4,707	Plessisville, t.....	6,570	St. Georges (Beauce	
La Prairie, t.....	7,328	Pointe au Pic, v.....	1,333	Co.), t.....	4,082
La Providence, v.....	4,251	Pointe aux Trembles, c..	21,926	St. Georges (Champlain	
LaSalle, c.....	30,904	Pointe Claire, c.....	22,709	Co.), v.....	1,775
LaSarre, t.....	3,944	Pointe Gatineau, t.....	8,854	St. Georges W., t.....	4,755
L'Assomption, t.....	4,448	Pont Rouge, v.....	2,988	St. Germain de	
La Station du Coteau, v..	1,032	Pont Viau, c.....	16,077	Grantham, v.....	1,015

## 9.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over, by Province, Census 1961—continued

Province and Incorporated Centre	Population 1961 Census	Province and Incorporated Centre	Population 1961 Census	Province and Incorporated Centre	Population 1961 Census
No.		No.		No.	
<b>Quebec—continued</b>		<b>Quebec—concluded</b>		<b>Ontario—continued</b>	
St. Hilaire, v.....	2,911	Terrebonne, t.....	6,207	Chalk River, v.....	1,135
St. Honoré, v.....	1,009	Thetford Mines, c.....	21,618	Chatham, c.....	29,826
St. Hubert, t.....	14,380	Thurso, v.....	3,310	Chelmsford, t.....	2,559
St. Hyacinthe, c.....	22,354	Tracy, t.....	8,171	Chesley, t.....	1,697
St. Jacques, v.....	2,038	Tring Junction, v.....	1,214	Chesterville, v.....	1,248
St. Jean, c.....	26,988	Trois Pistoles, c.....	4,349	Chippawa, v.....	3,256
St. Jean de		Trois-Rivières, c.....	53,477	Clinton, t.....	3,491
Boischatel, v.....	1,576	Val David, v.....	1,118	Cobalt, t.....	2,209
St. Jean Eudes, v.....	2,873	Val d'Or, t.....	10,983	Cobourg, t.....	10,646
St. Jérôme (Lac St.		Valée Junction, v.....	1,405	Cochrane, t.....	4,521
Jean Co.), v.....	1,962	Valleyfield (Salaberry		Colborne, v.....	1,336
St. Jérôme (Terrebonne		de), c.....	27,297	Collingwood, t.....	8,385
Co.), c.....	24,546	Val St. Michel, t.....	1,290	Coniston, t.....	2,692
St. Joseph (Beauce		Varennes, v.....	2,240	Copper Cliff, t.....	3,600
Co.), v.....	2,484	Verchères, v.....	1,768	Cornwall, c.....	43,639
St. Joseph (St.		Verdun, c.....	78,317	Crystal Beach, v.....	1,886
Hyacinthe Co.), v.....	3,799	Victoriaville, t.....	18,720	Deep River, t.....	5,377
St. Joseph de la		Ville Marie, v.....	1,710	Delhi, t.....	3,427
Rivière Bleue, v.....	1,540	Villeneuve, t.....	1,934	Deseronto, t.....	1,797
St. Joseph de Sorel, t.....	3,588	Warwick, t.....	2,487	Dresden, t.....	2,346
St. Jovite, v.....	2,692	Waterloo, t.....	4,543	Dryden, t.....	5,728
St. Lambert, c.....	14,531	Waterville, v.....	1,330	Dundas, t.....	12,912
St. Laurent, c.....	49,805	Weedon Centre, v.....	1,426	Dunnville, t.....	5,181
St. Léonard de Port		Westmount, c.....	25,012	Durham, t.....	2,180
Maurice, t.....	4,893	Windsor, t.....	6,589	Eastview, t. <sup>2</sup>	24,555
St. Maro des		Yamachiche, v.....	1,186	Eganville, v.....	1,549
Carrières, v.....	2,622			Elmira, t.....	3,337
Ste. Marie, t.....	3,662			Elora, v.....	1,486
St. Michel, c.....	55,978			Englehart, t.....	1,786
St. Noël, v.....	1,124	Acton, t.....	4,144	Erin, v.....	1,005
St. Pacôme, v.....	1,242	Ajax, t.....	7,755	Espanola, t.....	5,353
St. Pascal, v.....	2,144	Alexandria, t.....	2,897	Essex, t.....	3,428
St. Pie, v.....	1,434	Alfred, v.....	1,195	Exeter, t.....	3,047
St. Pierre, t.....	6,795	Alliston, t.....	2,884	Fenelon Falls, v.....	1,359
St. Raphaël, v.....	1,134	Almonte, t.....	3,267	Fergus, t.....	3,831
St. Raymond, t.....	3,931	Amherstburg, t.....	4,452	Fonthill, v.....	2,324
St. Rédempteur, v.....	1,035	Arnprior, t.....	5,474	Forest, t.....	2,188
St. Rémi, t.....	2,276	Arthur, v.....	1,200	Forest Hill, v.....	20,489
St. Rosalie, v.....	1,255	Athens, v.....	1,015	Fort Erie, t.....	9,027
Ste. Rose, t.....	7,571	Aurora, t.....	8,791	Fort Frances, t.....	9,481
St. Sauveur des		Aylmer, t.....	4,705	Fort William, c.....	45,214
Monts, v.....	1,702	Ayr, v.....	1,016	Frankford, v.....	1,642
St. Siméon, v.....	1,197	Bancroft, v.....	2,615	Galt, c.....	27,830
St. Thècle, v.....	2,009	Barrie, c.....	21,169	Gananoque, t.....	5,096
St. Thérèse, c.....	11,771	Barry's Bay, v.....	1,439	Georgetown, t.....	10,298
St. Timothée, v.....	1,003	Beamsville, v.....	2,537	Geraldton, t.....	3,375
St. Tite, t.....	3,250	Beaverton, v.....	1,217	Glencoe, v.....	1,156
St. Ulric, v.....	1,021	Belle River, v.....	1,854	Goderich, t.....	6,411
St. Vincent de Paul, t.....	11,214	Belleville, c.....	30,655	Gravenhurst, t.....	3,077
St. Zacharie, v.....	1,361	Blenheim, t.....	3,151	Grimsby, t.....	5,148
Sacré Cœur de Jésus, v.....	1,108	Blind River, t.....	4,093	Guelph, c.....	39,838
Sayabec, v.....	2,314	Bobcaygeon, v.....	1,210	Hagersville, v.....	2,075
Schefferville, t.....	3,178	Bolton, v.....	2,104	Haileybury, t.....	2,638
Scotstown, t.....	1,038	Bowmanville, t.....	7,397	Hamilton, c.....	273,991
Senneterre, t.....	3,246	Bracebridge, t.....	2,927	Hanover, t.....	4,401
Sennerville, v.....	1,262	Bradford, t.....	2,342	Harriston, t.....	1,631
Sept Îles, c.....	14,196	Brampton, t.....	18,467	Harrow, t.....	1,787
Shawbridge, v.....	1,034	Brantford, c.....	55,201	Havelock, v.....	1,260
Shawinigan, c.....	32,169	Bridgeport, v.....	1,672	Hawkesbury, t.....	8,661
Shawinigan S., v.....	12,683	Brighton, v.....	2,403	Hearst, t.....	2,373
Shawville, c.....	1,534	Brookville, t. <sup>1</sup>	17,744	Hespeler, t.....	4,519
Sherbrooke, v.....	66,554	Burlington, t.....	47,068	Huntsville, t.....	3,189
Sillery, c.....	14,109	Caledonia, t.....	2,198	Ingersoll, t.....	6,874
Sorel, c.....	17,147	Campbellford, t.....	3,478	Iroquois, v.....	1,136
Stanstead Plain, v.....	1,116	Cannington, v.....	1,024	Iroquois Falls, t.....	1,681
Sutton, v.....	1,755	Capreol, t.....	3,003	Kapuskasing, t.....	6,870
Tadoussac, v.....	1,083	Cardinal, v.....	1,944	Keewatin, v.....	2,197
Temiscaming, t.....	2,517	Carleton Place, t.....	4,796	Kemptville, v. <sup>1</sup>	1,959
Templeton, v.....	2,965	Casselman, v.....	1,277	Kenora, t.....	10,904

For footnotes, see end of table, p. 193.

**9.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over,  
by Province, Census 1961—continued**

Province and Incorporated Centre	Popu- lation 1961 Census	Province and Incorporated Centre	Popu- lation 1961 Census	Province and Incorporated Centre	Popu- lation 1961 Census
	No.		No.		No.
<b>Ontario—continued</b>		<b>Ontario—continued</b>		<b>Ontario—concluded</b>	
Kincardine, t.....	2,841	Powassan, t.....	1,064	Woodbridge, v.....	2,315
Kingston, c.....	53,526	Prescott, t.....	5,366	Woodstock, c.....	20,486
Kingsville, t.....	3,041	Preston, t.....	11,577		
Kitchener, c.....	74,485	Rainy River, t.....	1,168	<b>Manitoba—</b>	
Lakefield, v.....	2,167	Renfrew, t.....	8,935	Altona, t.....	2,026
Leamington, t.....	9,030	Richmond, v.....	1,215	Beauséjour, t.....	1,770
Leaside, t.....	18,579	Richmond Hill, t.....	16,446	Boissevain, t.....	1,303
Levack, t.....	3,178	Ridgetown, t.....	2,603	Brandon, c.....	28,166
Lindsay, t.....	11,399	Riverside, t.....	18,089	Brooklands, v.....	4,369
Listowel, t.....	4,002	Rockcliffe Park, v.....	2,084	Carberry, t.....	1,113
Little Current, t.....	1,527	Rockland, t.....	3,307	Carman, t.....	1,930
Lively, t.....	3,211	Rodney, v.....	1,041	Dauphin, t.....	7,374
London, c.....	169,569	St. Catharines, c.....	84,472	East Kildonan, c.....	27,305
Long Branch, v.....	11,039	St. Clair Beach, v.....	1,460	Flin Flon, t. (Man. and Sask.).....	11,104
L'Original, v.....	1,189	St. Mary's, t.....	4,482	Gimli, t.....	1,841
Lucknow, v.....	1,031	St. Thomas, c.....	22,469	Grandview, t.....	1,057
Madoc, v.....	1,347	Sarnia, c.....	50,976	Killarney, t.....	1,729
Markdale, v.....	1,090	Sault Ste. Marie, c.....	43,088	Melita, t.....	1,038
Markham, v.....	4,294	Seaforth, t.....	2,255	Mimosedosa, t.....	2,211
Marmora, v.....	1,381	Shelburne, v.....	1,239	Morden, t.....	2,793
Massey, t.....	1,324	Simcoe, t.....	8,754	Morris, t.....	1,370
Mattawa, t.....	3,814	Sioux Lookout, t.....	2,453	Neepawa, t.....	3,197
Meaford, t.....	3,834	Smiths Falls, t.....	9,603	Portage la Prairie, c.....	12,388
Midland, t.....	8,656	Smooth Rock Falls, t.....	1,131	Rivers, t.....	1,574
Milton, t.....	5,629	Southampton, t.....	1,818	Roblin, v.....	1,368
Milverton, v.....	1,111	South River, v.....	1,044	Russell, t.....	1,263
Mimico, t.....	18,212	Stayner, t.....	1,671	St. Boniface, c.....	37,600
Mitchell, t.....	2,247	Stirling, v.....	1,315	St. James, c.....	33,977
Morrisburg, v.....	1,820	Stittsville, v.....	1,508	Selkirk, t.....	8,576
Mount Forest, t.....	2,623	Stoney Creek, t.....	6,043	Souris, t.....	1,841
Napanee, t.....	4,500	Stouffville, v.....	3,188	Steinbach, t.....	3,739
Newcastle, v.....	1,272	Stratford, c.....	20,467	Stonewall, t.....	1,420
New Hamburg, v.....	2,181	Strathroy, v.....	5,150	Swan River, t.....	3,163
New Liskeard, t.....	4,896	Streetsville, v.....	5,056	The Pas, t.....	4,671
Newmarket, t.....	8,932	Sturgeon Falls, t.....	6,288	Transcona, t.....	14,248
New Toronto, t.....	13,384	Sudbury, c.....	80,120	Tuxedo, t.....	1,627
Niagara, t.....	2,712	Sutton, v.....	1,470	Verden, t.....	2,708
Niagara Falls, c.....	22,351	Swansea, v.....	9,628	West Kildonan, c.....	20,077
North Bay, c.....	23,781	Tavistock, v.....	1,232	Winkler, t.....	2,529
Norwich, v.....	1,703	Tecumseh, v.....	4,476	Winnipeg, c.....	265,429
Norwood, v.....	1,060	Thamesville, v.....	1,054		
Oakville, t.....	10,366	Thessalon, t.....	1,725		
Orangeville, t.....	4,593	Thornbury, t.....	1,097		
Orillia, t.....	15,345	Thornhill, t.....	8,633	<b>Saskatchewan—</b>	
Oshawa, c.....	62,415	Tilbury, t.....	3,030	Assiniboia, t.....	2,491
Ottawa, c.....	268,206	Tillsonburg, t.....	6,600	Battleford, t.....	1,627
Owen Sound, c.....	17,421	Timmins, t.....	29,270	Biggar, t.....	2,702
Palmerston, t.....	1,554	Toronto, c.....	672,407	Broadview, t.....	1,008
Paris, t.....	5,820	Trenton, t.....	13,183	Canora, t.....	2,117
Parkhill, t.....	1,169	Tweed, v.....	1,791	Creighton, t.....	1,729
Parry Sound, t.....	6,004	Uxbridge, t.....	2,316	Esterhazy, t.....	1,114
Pembroke, t.....	16,791	Vankleek Hill, t.....	1,735	Estevan, c.....	7,728
Penetanguishene, t.....	5,340	Victoria Harbour, v.....	1,066	Eston, t.....	1,695
Perth, t.....	5,360	Walkerton, t.....	3,851	Flin Flon, t.....	4
Petawawa, v.....	4,509	Wallaceburg, t.....	7,881	Fort Qu'Appelle, t.....	1,521
Peterborough, c.....	47,185	Waterdown, v.....	1,844	Gravelbourg, t.....	1,499
Petrolia, t.....	3,708	Waterford, t.....	2,221	Grenfell, t.....	1,256
Pickering, v.....	1,755	Waterloo, c.....	21,366	Gull Lake, t.....	1,038
Pictou, t.....	4,862	Watford, v.....	1,293	Herbert, t.....	1,008
Point Edward, v.....	2,744	Welland, c.....	36,079	Hudson Bay, t.....	1,601
Port Arthur, c.....	45,276	Wellington, v.....	1,064	Humboldt, t.....	3,245
Port Colborne, t.....	14,886	West Lorne, v.....	1,070	Indian Head, t.....	1,802
Port Credit, t.....	7,203	Weston, t.....	9,715	Kamsack, t.....	2,968
Port Dover, t.....	3,064	Wheatley, v.....	1,362	Kerobert, t.....	1,220
Port Elgin, t.....	1,632	Whitby, t.....	14,685	Kindersley, t.....	2,990
Port Hope, t.....	8,091	Wiarton, t.....	2,138	Leader, t.....	1,211
Port McNicoll, v.....	1,053	Winchester, v.....	1,429	Lloydminster, c. (Sask. and Alta.).....	5,667
Port Perry, v.....	2,262	Windsor, c.....	114,367	Maple Creek, t.....	2,291
Port Stanley, v.....	1,460	Wingham, t.....	2,922		

For footnote, see end of table, p. 193.



## 9.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over, by Province, Census 1961—concluded

Province and Incorporated Centre	Population 1961 Census	Province and Incorporated Centre	Population 1961 Census	Province and Incorporated Centre	Population 1961 Census
No.		No.		No.	
<b>Saskatchewan—</b>		<b>Alberta—concluded</b>		<b>British Columbia—</b>	
concluded		Grande Prairie, c.....	8,352	concluded	
Meadow Lake, t.....	2,803	Grimshaw, t.....	1,095	Creston, v.....	2,460
Melfort, t.....	4,039	Hanna, t.....	2,645	Cumberland, v.....	1,303
Melville, c.....	5,191	High Prairie, t.....	1,756	Dawson Creek, c.....	10,946
Moose Jaw, c.....	33,206	High River, t.....	2,276	Duncan, c.....	3,726
Moosomin, t.....	1,781	Hinton, t.....	3,529	Enderby, c.....	1,075
Nipawin, t.....	3,836	Innisfail, t.....	2,270	Fernie, c.....	2,661
North Battleford, c.....	11,230	Jasper Place, t.....	30,530	Fort St. James, v.....	1,081
Outlook, t.....	1,340	Lac La Biche, t.....	1,314	Fort St. John, t.....	3,619
Oxbow, t.....	1,359	Lacombe, t.....	3,029	Fruitvale, v.....	1,032
Prince Albert, c.....	24,168	Leduc, t.....	2,356	Gibson's Landing, v.....	1,091
Radville, t.....	1,067	Lethbridge, c.....	35,454	Golden, v.....	1,776
Regina, c.....	112,141	Lloydminster, c.....	5	Grand Forks, c.....	2,347
Rosetown, v.....	2,450	Magrath, t.....	1,338	Hope, v.....	2,751
Rosthern, t.....	1,264	McLennan, t.....	1,078	Kamloops, c.....	10,076
Saskatoon, c.....	95,526	McMurray, t.....	1,186	Kelowna, c.....	13,188
Shaunavon, t.....	2,154	Medicine Hat, c.....	24,484	Kimberley, c.....	6,013
Shellbrook, t.....	1,042	Montgomery, t.....	5,077	Kinnaird, v.....	2,123
Swift Current, c.....	12,186	Nanton, t.....	1,054	Ladysmith, v.....	2,173
Tisdale, t.....	2,402	Okotoks, t.....	1,043	Lake Cowichan, v.....	2,149
Unity, t.....	1,902	Olds, t.....	2,433	Langley, c.....	2,365
Wadena, t.....	1,311	Peace River, t.....	2,543	Lillooet, v.....	1,304
Weyburn, c.....	1,461	Pincher Creek, t.....	2,961	Marysville, v.....	1,057
Wilkie, t.....	9,101	Ponoka, t.....	3,938	Merritt, v.....	3,039
Wolesey, t.....	1,612	Provost, t.....	1,022	Mission City, t.....	3,251
Wynyard, t.....	1,031	Raymond, t.....	2,362	Nanaimo, c.....	14,135
Yorkton, c.....	1,686	Redcliff, t.....	2,221	Nelson, c.....	7,074
	9,995	Red Deer, c.....	19,612	New Westminster, c.....	33,654
		Redwater, c.....	1,135	North Kamloops, v.....	6,456
		Rimbe, t.....	1,266	North Vancouver, c.....	23,656
<b>Alberta—</b>		Rocky Mountain		Oliver, v.....	1,774
Athabasca, t.....	1,487	House, t.....	2,360	Osoyoos, v.....	1,022
Barrhead, t.....	2,286	St. Albert, t.....	4,059	Parksville, v.....	1,183
Bellevue, v.....	1,323	St. Paul, t.....	2,823	Penticton, c.....	13,859
Beverly, t.....	9,041	Stettler, t.....	3,638	Port Alberni, c.....	11,560
Black Diamond, t.....	1,043	Stony Plain, t.....	1,311	Port Coquitlam, c.....	8,111
Blairmore, t.....	1,980	Sylvan Lake, t.....	1,381	Port Moody, c.....	4,789
Bonnyville, t.....	1,736	Taber, t.....	3,951	Prince George, c.....	13,877
Bow Island, t.....	1,122	Three Hills, t.....	1,491	Prince Rupert, c.....	11,987
Bowness, t.....	9,184	Valleyview, t.....	1,077	Princeston, v.....	2,163
Brooks, t.....	2,827	Vegreville, t.....	2,908	Quesnel, t.....	4,673
Calgary, c.....	249,641	Vermilion, t.....	2,449	Revelstoke, c.....	3,624
Camrose, c.....	6,939	Viking, t.....	1,043	Roseland, c.....	4,354
Cardston, t.....	2,801	Vulcan, t.....	1,310	Salmon Arm, v.....	1,506
Castor, t.....	1,025	Wainwright, t.....	3,351	Sidney, v.....	1,558
Claresholm, t.....	2,143	Westlock, t.....	1,838	Smithers, v.....	2,487
Coaldale, t.....	2,592	Wetaskiwin, c.....	5,300	Squamish, v.....	1,557
Cold Lake, t.....	1,307	Whitecourt, v.....	1,054	Trail, c.....	11,580
Coleman, t.....	1,713			Vancouver, c.....	384,522
Devon, t.....	1,418			Vanderhoof, v.....	1,460
Didsbury, t.....	1,254	<b>British Columbia—</b>		Vernon, c.....	10,250
Drayton Valley, t.....	3,854	Alberni, c.....	4,616	Victoria, c.....	54,941
Drumheller, c.....	2,931	Armstrong, c.....	1,288	Warfield, v.....	2,212
Edmonton, c.....	281,027	Burns Lake, v.....	1,041	White Rock, c.....	6,453
Edson, t.....	3,198	Campbell River, v.....	3,737	Williams Lake, v.....	2,120
Fairview, t.....	1,506	Castlegar, v.....	2,253		
Forest Lawn, t.....	12,263	Chilliwack, c.....	8,259		
Fort Macleod, t.....	2,490	Comox, v.....	1,756		
Fort Saskatchewan, t.....	2,972	Courtenay, c.....	3,485		
Grand Centre, t.....	1,493	Cranbrook, c.....	5,549		
				<b>Yukon Territory—</b>	
				Whitehorse, c.....	5,031

<sup>1</sup> Brockville became a city on Apr. 1, 1962.<sup>2</sup> Eastview became a city on Jan. 1, 1963.<sup>3</sup> Kemptville

became a town on Jan. 1, 1963.

<sup>4</sup> See Manitoba.<sup>5</sup> See Saskatchewan.

## Subsection 5.—Sex and Age Distribution

The sex and age distributions of a population are basic to most, if not all, other analyses, as they influence employment, marriage, birth and death rates and a multitude of other factors that are of great importance in the national life.

**Sex.**—The Canadian population has always been characterized by an excess of males, although this excess has been greatly modified in recent years. Since Confederation, the peak sex ratio for Canada as a whole was 113 reached in 1911, a census year that fell within a period of heavy immigration; the 1961 ratio was 102. In the older settled provinces east of Manitoba, the ratio varied between 104 in 1911 and 101 in 1961 but in the western provinces which were being opened to settlement in the early years of the century the ratio changed from a high of 146 in 1911 to 105 in 1961.

The sex distributions and variations in ratio among the provinces are given for the census years 1951, 1956 and 1961 in Table 10.

**10.—Sex Distribution of the Population and Sex Ratio, by Province, Census Years 1951, 1956 and 1961**

Province or Territory	1951			1956			1961		
	Males	Females	Males to 100 Females	Males	Females	Males to 100 Females	Males	Females	Males to 100 Females
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Nfld.....	185,143	176,273	105	213,905	201,169	106	234,924	222,929	105
P.E.I.....	50,218	48,211	104	50,510	48,775	104	53,357	51,272	104
N.S.....	324,955	317,629	102	353,182	341,535	103	374,244	362,763	103
N.B.....	259,211	256,486	101	279,590	275,026	102	302,440	295,496	102
Que.....	2,022,127	2,033,554	99	2,317,677	2,310,701	100	2,631,856	2,627,355	100
Ont.....	2,314,170	2,283,372	101	2,721,519	2,683,414	101	3,134,528	3,101,564	101
Man.....	394,818	381,723	103	432,478	417,562	104	468,503	453,183	103
Sask.....	434,568	397,160	109	458,428	422,237	109	479,564	445,617	108
Alta.....	492,192	447,309	110	585,921	537,195	109	689,383	642,561	107
B.C.....	596,961	568,249	105	720,516	677,948	106	829,094	799,988	104
Y.T.....	5,457	3,639	150	6,924	5,266	131	8,178	6,450	127
N.W.T.....	9,053	6,951	130	11,229	8,084	139	12,822	10,176	126
<b>Canada....</b>	<b>7,088,873</b>	<b>6,920,556</b>	<b>102</b>	<b>8,151,879</b>	<b>7,928,912</b>	<b>103</b>	<b>9,218,893</b>	<b>9,019,354</b>	<b>102</b>

**Age.**—Recent trends in vital rates and immigration have had a considerable effect on the age composition of the Canadian people. A high birth rate together with a low death rate among children added nearly 2,000,000 to the number of persons under 15 years of age between 1951 and 1961, an increase of 46 p.c. The proportion of this group to the total population increased from 30.3 p.c. to 34.0 p.c. in the ten-year period. The population of working age—those of 15 to 64 years of age—increased more slowly at 22.9 p.c. in the decade and the relative proportion of this group declined from 61.9 p.c. to 58.4 p.c. Without the influence of immigration in the 1951-61 period, the proportion of this group would have been much lower since a large part of it consisted of persons born in the low birth rate period of the 1930s. The proportion of persons 65 years of age or over in 1961 was 7.6 p.c. compared with 7.8 p.c. in 1951.

Table 11 shows the population of Canada classified by five-year age groups and by sex for the census years 1951, 1956 and 1961. The provincial distribution by specified age group is given for 1961 in Table 12.

## 11.—Male and Female Populations, by Age Group, Census Years 1951, 1956 and 1961

Age Group	1951		1956		1961	
	Male	Female	Male	Female	Male	Female
	No.	No.	No.	No.	No.	No.
0 - 4 years.....	879,063	843,046	1,011,835	971,728	1,154,091	1,102,310
5 - 9 ".....	713,873	683,952	919,952	887,101	1,063,840	1,015,682
10 - 14 ".....	575,122	555,661	732,032	702,562	948,160	907,839
15 - 19 ".....	532,180	525,792	586,635	575,666	729,035	703,524
20 - 24 ".....	537,535	551,106	567,179	561,931	587,139	598,507
25 - 29 ".....	552,812	578,403	605,836	592,301	613,897	595,400
30 - 34 ".....	512,557	530,177	602,535	613,750	644,407	627,403
35 - 39 ".....	503,571	495,562	555,763	558,622	631,072	639,852
40 - 44 ".....	445,800	422,767	522,615	502,784	559,996	558,965
45 - 49 ".....	387,708	356,971	455,827	422,988	515,516	499,800
50 - 54 ".....	340,461	322,195	381,835	351,215	442,909	420,279
55 - 59 ".....	292,564	278,126	321,973	307,271	362,145	343,690
60 - 64 ".....	264,324	241,828	265,652	259,265	292,569	291,066
65 - 69 ".....	228,076	205,421	237,551	228,562	239,685	247,417
70 - 74 ".....	160,398	154,674	187,490	183,218	196,076	206,099
75 - 79 ".....	94,130	94,261	113,550	113,948	134,186	140,051
80 - 84 ".....	45,963	50,828	55,636	61,460	69,046	77,771
85 - 89 ".....	17,539	22,060	21,688	26,670	27,178	33,606
90 years or over.....	5,197	7,726	6,295	9,870	7,946	12,093
<b>Totals.....</b>	<b>7,088,873</b>	<b>6,920,556</b>	<b>8,151,879</b>	<b>7,928,912</b>	<b>9,218,893</b>	<b>9,019,354</b>

## 12.—Age Distribution of the Population, by Province, Census 1961

Province or Territory	0-4 Years	5-9 Years	10-14 Years	15-19 Years	20-24 Years	25-34 Years
	No.	No.	No.	No.	No.	No.
Newfoundland.....	67,695	64,404	59,464	43,829	30,238	52,290
Prince Edward Island.....	13,221	12,216	12,264	8,875	6,344	11,049
Nova Scotia.....	91,239	84,760	80,329	64,239	49,311	87,316
New Brunswick.....	78,560	75,882	72,745	53,514	37,419	67,477
Quebec.....	671,256	624,074	568,065	467,426	369,633	735,825
Ontario.....	740,193	674,519	593,037	436,883	386,966	882,476
Manitoba.....	107,574	101,382	91,150	70,808	59,007	117,317
Saskatchewan.....	113,755	106,886	94,273	72,864	56,996	113,556
Alberta.....	179,888	159,053	130,383	99,004	89,154	192,571
British Columbia.....	186,793	171,661	150,689	112,653	95,230	214,269
Yukon Territory.....	2,337	1,761	1,187	765	1,109	2,956
Northwest Territories.....	3,890	2,924	2,413	1,699	2,239	4,005
<b>Canada.....</b>	<b>2,256,401</b>	<b>2,079,522</b>	<b>1,855,999</b>	<b>1,432,559</b>	<b>1,183,646</b>	<b>2,481,107</b>
	35-44 Years	45-54 Years	55-64 Years	65-69 Years	70+ Years	Total
	No.	No.	No.	No.	No.	No.
Newfoundland.....	48,964	39,343	24,731	9,684	17,211	457,853
Prince Edward Island.....	11,407	10,501	7,822	3,582	7,348	104,629
Nova Scotia.....	89,618	75,881	50,897	21,341	42,076	737,007
New Brunswick.....	69,809	56,676	38,937	16,216	30,701	597,936
Quebec.....	665,734	511,334	339,563	116,923	189,378	5,259,211
Ontario.....	866,563	670,544	476,838	180,063	328,010	6,236,092
Manitoba.....	120,774	100,500	69,886	28,169	55,119	921,686
Saskatchewan.....	115,833	97,430	68,018	28,208	57,362	925,181
Alberta.....	172,623	128,547	87,643	31,724	61,354	1,331,944
British Columbia.....	223,813	184,823	123,535	50,752	114,864	1,629,082
Yukon Territory.....	2,118	1,243	677	180	295	14,628
Northwest Territories.....	2,629	1,682	923	260	334	22,998
<b>Canada.....</b>	<b>2,389,885</b>	<b>1,878,504</b>	<b>1,289,470</b>	<b>487,102</b>	<b>904,052</b>	<b>18,238,247</b>



### Subsection 6.—Marital Status

After age and sex, marital status analysis is probably next in importance from a vital, economic and social viewpoint. The number of married females between 15 and 45 years of age is a most significant factor in the fertility of a population. If the proportion of females in this group is low, the expected birth rate will be low. In 1961, 62.9 p.c. of all married females were in the 15-44 age group compared with 64.0 p.c. in 1951, 61.2 p.c. in 1941 and 63.5 p.c. in 1931.

The high birth rate in the 1951-61 period, besides having a notable effect on the general population growth and age composition, has been an influence on the 32.7-p.c. increase in the single population. During the same period, the married population increased by 28.2 p.c. and the widowed by 21.0 p.c. Other striking features are the excess of married males (largely consisting of male immigrants whose wives had not yet joined them) and the great preponderance of widows over widowers.

The marital status of the population in 1961 is shown in Table 13.

13.—Marital Status of the Population, by Age Group and Sex, Census 1961

Age Group and Sex		Single	Married	Widowed	Divorced	Total
		No.	No.	No.	No.	No.
Under 15 years.....	M.	3,166,091	—	—	—	3,166,091
	F.	3,025,831	—	—	—	3,025,831
	T.	6,191,922	—	—	—	6,191,922
15-19      ".....	M.	719,727	9,198	88	22	729,035
	F.	642,007	61,197	262	58	703,524
	T.	1,361,734	70,395	350	80	1,432,559
20-24      ".....	M.	408,005	178,618	233	283	587,139
	F.	241,435	353,215	931	926	596,507
	T.	649,440	531,833	1,164	1,209	1,183,646
25-34      ".....	M.	293,298	959,702	1,864	3,440	1,258,304
	F.	158,119	1,051,198	7,407	6,079	1,222,803
	T.	451,417	2,010,900	9,271	9,519	2,481,107
35-44      ".....	M.	143,174	1,034,645	7,527	5,722	1,191,068
	F.	108,573	1,052,760	28,258	9,226	1,198,817
	T.	251,747	2,087,405	35,785	14,948	2,389,885
45-54      ".....	M.	100,426	834,787	17,128	6,084	958,425
	F.	91,012	751,129	69,415	8,523	920,079
	T.	191,438	1,585,916	86,543	14,607	1,878,504
55-64      ".....	M.	74,357	540,934	35,390	4,033	654,714
	F.	65,697	439,436	125,540	4,083	634,756
	T.	140,054	980,370	160,930	8,116	1,289,470
65-69      ".....	M.	26,251	185,739	26,516	1,179	239,685
	F.	25,019	136,933	84,579	886	247,417
	T.	51,270	322,672	111,095	2,065	487,102
70 years or over.....	M.	46,235	276,102	110,761	1,334	434,432
	F.	47,871	158,711	262,324	714	469,620
	T.	94,106	434,813	373,085	2,048	904,052
All Ages.....	M.	4,977,564	4,019,725	199,507	22,097	9,218,893
	F.	4,405,564	4,004,579	578,716	30,495	9,019,354
	T.	9,383,128	8,024,304	778,223	52,592	18,238,247

### Subsection 7.—Ethnic Groups and Birthplaces

**Ethnic Groups.**—A population made up of diverse ethnic groups gives rise to political, social and economic problems quite different in nature from those of one with a more homogeneous ethnic composition. These problems are mitigated, however, to the extent

that certain groups are more easily integrated than others. It is equally true that the different backgrounds of various ethnic groups lend variety and diversity to the national life.

The two basic groups in the Canadian population are the French and British Isles ethnic groups. The influence of the French in Canada covers a longer period and, with the exception of the 1921 Census, this group has always exceeded in number any of the components of the British Isles ethnic group.

In 1961, each person was asked the question: "To what ethnic or cultural group did you or your ancestor (on the male side) belong on coming to this Continent?". The language spoken at the time by the person, or his paternal ancestor, was used as an aid in determining the person's ethnic group. The classification is given for 1961 in Table 14 with comparative figures for 1951 and 1941. Information on ethnic group was not collected in the 1956 Census.

#### 14.—Distribution of the Population by Ethnic Group, Census Years 1941, 1951 and 1961

Ethnic Group	1941 <sup>1</sup>	1951	1961	
	No.	No.	No.	p.c.
<b>British Isles</b> .....	<b>5,715,904</b>	<b>6,709,685</b>	<b>7,996,669</b>	<b>43.8</b>
English.....	2,968,402	3,630,344	4,195,175	23.0
Irish.....	1,267,702	1,439,635	1,753,351	9.6
Scottish.....	1,403,974	1,547,470	1,902,302	10.4
Other.....	75,826	92,236	145,841	0.8
<b>Other European</b> .....	<b>5,526,964</b>	<b>6,872,889</b>	<b>9,657,195</b>	<b>53.0</b>
Austrian.....	37,715	32,231	106,535	0.6
Belgian.....	29,711	35,148	61,382	0.3
Czech and Slovak.....	42,912	63,959	73,061	0.4
Danish.....	37,439	42,671	85,473	0.5
Finnish.....	41,683	43,745	59,436	0.3
French.....	3,483,038	4,319,167	5,540,346	30.4
German.....	464,682	619,995	1,049,599	5.8
Greek.....	11,692	13,966	56,475	0.3
Hungarian.....	54,598	60,460	126,220	0.7
Icelandic.....	21,050	23,307	30,623	0.2
Italian.....	112,625	152,245	450,351	2.5
Jewish.....	170,241	181,670	173,344	1.0
Lithuanian.....	7,789	16,224	27,629	0.2
Netherlands.....	212,863	264,267	429,679	2.4
Norwegian.....	100,718	119,266	148,681	0.8
Polish.....	167,485	219,845	323,517	1.8
Romanian.....	24,689	23,601	43,805	0.2
Russian.....	83,708	91,279	119,168	0.7
Swedish.....	85,396	97,780	121,757	0.7
Ukrainian.....	305,929	395,043	473,337	2.6
Yugoslavic.....	21,214	21,404	68,587	0.4
Other.....	9,787	35,616	88,190	0.5
<b>Asiatic</b> .....	<b>74,064</b>	<b>72,827</b>	<b>121,753</b>	<b>0.7</b>
Chinese.....	34,627	32,528	58,197	0.3
Japanese.....	23,149	21,663	29,157	0.2
Other.....	16,288	18,636	34,399	0.2
<b>Other Origin</b> .....	<b>189,723</b>	<b>354,028</b>	<b>462,630</b>	<b>2.5</b>
Native Indian and Eskimo.....	125,521	165,607	220,121	1.2
Negro.....	22,174	18,020	32,127	0.2
Other and not stated.....	42,028 <sup>2</sup>	170,401	210,382	1.2

<sup>1</sup> Excludes Newfoundland.

<sup>2</sup> Includes 35,416 half-breeds.

**Birthplaces.**—Table 15 gives the total population of Canada classified by country of birth for the census years 1941, 1951 and 1961, and Table 16 shows the province of birth of Canadian-born persons for the same years. For immigrants, the country of birth was recorded according to boundaries existing at the date of the census. Information on birthplaces was not collected in the 1956 Census.

## 15.—Country of Birth of the Population, Census Years 1941, 1951 and 1961

Country	1941 <sup>1</sup>	1951	1961	
	No.	No.	No.	p.c.
Canada.....	9,487,808	11,949,518	15,393,984	84.4
British Isles.....	960,125 <sup>2</sup>	912,482	969,715	5.3
Other Commonwealth.....	43,644	20,567	47,887	0.3
Europe.....	653,705	801,618	1,468,058	8.0
Austria.....	50,713	37,598	70,192	0.4
Czechoslovakia.....	25,564	29,546	35,743	0.2
France.....	13,795	15,650	36,103	0.2
Germany.....	28,479	42,693	189,131	1.0
Greece.....	5,871	8,594	38,017	0.2
Hungary.....	31,813	32,929	72,900	0.4
Italy.....	40,432	57,789	258,071	1.4
Netherlands.....	9,923	41,457	135,033	0.7
Poland.....	155,400	164,474	171,467	0.9
Scandinavian countries <sup>3</sup> .....	72,473	64,522	74,616	0.4
Union of Soviet Socialist Republics.....	124,402	188,292	186,653	1.0
Yugoslavia.....	17,416	20,912	50,826	0.3
Other European.....	77,424	97,162	149,306	0.8
Asia.....	44,443	37,145	57,761	0.3
China.....	29,095	24,166	36,724	0.2
Other Asian.....	15,348	12,979	21,037	0.1
United States.....	312,473	282,010	283,908	1.6
Other countries.....	3,512	6,089	16,934	0.1
<b>Totals.....</b>	<b>11,506,655<sup>4</sup></b>	<b>14,009,429</b>	<b>18,238,247</b>	<b>100.0</b>

<sup>1</sup> Excludes Newfoundland, Norway and Sweden.<sup>2</sup> Includes the Republic of Ireland.<sup>3</sup> Includes Denmark, Iceland, and the Faroe Islands.<sup>4</sup> Includes persons whose birthplace was not stated.

## 16.—Province of Birth of Canadian-Born Persons, Census Years 1941, 1951 and 1961

Province	1941	1951	1961	Province or Territory	1941	1951	1961
	No.	No.	No.		No.	No.	No.
Nfld.....	..	397,623	497,591	Sask.....	667,832	817,404	1,030,755
P.E.I.....	108,423	117,310	130,123	Alta.....	479,098	649,594	965,425
N.S.....	568,797	660,150	783,848	B.C.....	335,554	514,651	843,596
N.B.....	463,127	549,984	655,066	Yukon and N.W.T.....	12,267	16,654	26,028
Que.....	3,155,549	3,881,487	4,916,024				
Ont.....	3,123,810	3,645,074	4,667,159				
Man.....	570,349	699,587	878,369	<b>Canada.....</b>	<b>9,487,808<sup>1</sup></b>	<b>11,949,518</b>	<b>15,393,984</b>

<sup>1</sup> Includes persons born in Canada whose province of birth was not stated.

## Subsection 8.—Religious Denominations

In the 1961 Census, enumerators were instructed to record the specific religious body, denomination, sect or community reported in answer to the question: "What is your religion?" Thus it should be noted that census figures do not measure church membership or indicate the degree of affiliation with any religious body. As shown in Table 17, close to eight out of ten persons in Canada stated that they belonged to one of the three numerically largest denominations—Roman Catholic, United Church and Anglican—in 1961. The table gives comparative figures for the census years 1941 and 1951; this information was not collected in the 1956 Census.



**17.—Principal Religious Denominations of the Population, Census Years 1941, 1951 and 1961**

Religious Denomination	1941	1951	1961	
	No.	No.	No.	p.c.
Adventist.....	18,485	21,398	25,999	0.1
Anglican Church of Canada.....	1,754,368	2,060,720	2,409,068	13.2
Baptist.....	484,465	519,585	593,553	3.3
Greek Orthodox.....	139,845	172,271	239,766	1.3
Jehovah's Witnesses.....	7,007	34,596	68,018	0.4
Jewish.....	168,585	204,836	254,368	1.4
Lutheran.....	401,836	444,923	662,744	3.6
Mennonite <sup>1</sup> .....	111,554	125,938	152,452	0.8
Mormon.....	25,328	32,888	50,016	0.3
Pentecostal.....	57,742	95,131	143,877	0.8
Presbyterian.....	830,597	781,747	818,558	4.5
Roman Catholic.....	4,806,431	6,069,496	8,342,826	45.7
Salvation Army.....	33,609	70,275	92,054	0.5
Ukrainian (Greek) Catholic <sup>2</sup> .....	185,948	191,051	189,653	1.0
United Church of Canada.....	2,208,658	2,867,271	3,664,008	20.1
Other.....	272,197	317,303	531,287	2.9
<b>Totals.....</b>	<b>11,506,655<sup>3</sup></b>	<b>14,009,429</b>	<b>18,238,247</b>	<b>100.0</b>

<sup>1</sup> Includes "Hutterites".

<sup>2</sup> Includes "Other Greek Catholic".

<sup>3</sup> Exclusive of Newfoundland.

**Subsection 9.—Languages and Mother Tongues**

The term "official language" used by the census refers only to the English and French languages.\* "Mother tongue" is the language a person first learned in childhood and still understands. It should be noted that persons indicated as speaking "English only" or "French only" with respect to official language may also speak other languages and have a mother tongue other than English or French. The use of the English and French languages in Canada at the time of the 1961 Census is discussed in a special article appearing in the 1965 Year Book at pp. 180-184. Table 18 gives the numerical and percentage distribution of official language by province.

\* The British North America Act, 1867 (Sect. 133) makes provision for the use of the English and French languages as follows:—

"Either the English or the French Language may be used by any Person in the Debates of the Houses of the Parliament of Canada and of the Houses of the Legislature of Quebec; and both those Languages shall be used in the respective Records and Journals of those Houses; and either of those Languages may be used by any Person or in any Pleading or Process in or issuing from any Court of Canada established under this Act, and in or from all or any of the Courts of Quebec.

The Acts of the Parliament of Canada and of the Legislature of Quebec shall be printed and published in both those Languages."

**18.—Numerical and Percentage Distribution of the Population Speaking One, Both or Neither of the "Official" Languages, by Province, Census 1961**

NOTE.—See text and footnote above re the term "official language".

Province or Territory	English Only		French Only		English and French		Neither English nor French	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
Newfoundland.....	450,945	98.5	522	0.1	5,299	1.2	1,087	0.2
Prince Edward Island.....	95,296	91.1	1,219	1.2	7,938	7.6	176	0.2
Nova Scotia.....	684,805	92.9	5,935	0.8	44,987	6.1	1,277	0.2
New Brunswick.....	370,922	62.0	112,054	18.7	113,495	19.0	1,465	0.2
Quebec.....	608,635	11.6	3,254,850	61.9	1,338,878	25.5	56,848	1.1
Ontario.....	5,548,766	89.0	95,236	1.5	493,270	7.9	98,820	1.6
Manitoba.....	825,955	89.6	7,954	0.9	68,368	7.4	19,409	2.1
Saskatchewan.....	865,821	93.6	3,853	0.4	42,074	4.5	13,433	1.5
Alberta.....	1,253,824	94.1	5,534	0.4	56,920	4.3	15,666	1.2
British Columbia.....	1,552,560	95.3	2,559	0.2	57,504	3.5	16,459	1.0
Yukon Territory.....	13,679	93.5	35	0.3	825	5.6	86	0.6
Northwest Territories.....	13,554	58.9	109	0.5	1,614	7.0	7,721	33.6
<b>Canada.....</b>	<b>12,284,762</b>	<b>67.4</b>	<b>3,489,866</b>	<b>19.1</b>	<b>2,231,172</b>	<b>12.2</b>	<b>232,447</b>	<b>1.3</b>

Mother tongues of the population are shown in Table 19. The proportion reporting English as their mother tongue in 1961 was 58.5 p.c. (compared with 59.1 p.c. in 1951), French 28.1 p.c. (29.0 p.c. in 1951) and all other mother tongues 13.5 p.c. (11.8 p.c. in 1951).

**19.—Mother Tongues of the Population, Census 1961**

Mother Tongue	Number	Percentage of Total	Mother Tongue	Number	Percentage of Total
English.....	10,660,534	58.45	Danish.....	35,035	0.19
French.....	5,123,151	28.09	Swedish.....	32,632	0.18
German.....	563,713	3.09	Serbo-Croatian.....	28,866	0.16
Ukrainian.....	361,496	1.98	Japanese.....	17,856	0.10
Italian.....	339,626	1.86	Lithuanian.....	14,997	0.08
Netherlands.....	170,177	0.93	Flemish.....	14,304	0.08
Indian and Eskimo.....	166,531	0.91	Letish.....	14,062	0.08
Polish.....	161,720	0.89	Estonian.....	13,830	0.08
Magyar.....	85,939	0.47	Syrian and Arabic.....	12,999	0.07
Yiddish.....	82,448	0.45	Romanian.....	10,165	0.06
Chinese.....	49,099	0.27	Icelandic.....	8,993	0.05
Finnish.....	44,785	0.25	Gaelic.....	7,533	0.04
Russian.....	42,903	0.24	Welsh.....	3,040	0.02
Slovak.....	42,546	0.23	Other.....	48,758	0.27
Greek.....	40,455	0.22			
Norwegian.....	40,054	0.22	<b>Canada.....</b>	<b>18,238,247</b>	<b>100.00</b>

### Subsection 10.—Households and Families

This Subsection contains limited statistics on households and families recorded at the 1961 Census; more detailed information may be found in 1961 Census reports relating to households and families (see also p. 182).

A household, as defined in the census, consists of a person or a group of persons occupying one dwelling.\* It usually consists of a family with or without lodgers, employees, etc. However, it may consist of a group of unrelated persons, of two or more families sharing a dwelling, or of one person living alone. Every person is a member of some household and the number of households equals the number of occupied dwellings.

The total number and the average size of households are given by province for the census years 1951, 1956 and 1961 in Table 20. The relatively stable average of persons per household indicates an almost equal rate of increase for the dwelling stock as for the population.

\* A dwelling is defined as a structurally separate set of living quarters, with a private entrance either from outside the building or from a common hall, lobby, vestibule or stairway inside. The entrance must not be through another person's living quarters.

**20.—Households and Persons per Household, by Province, Census Years 1951, 1956 and 1961**

Province or Territory	Households			Average Persons per Household		
	1951	1956	1961	1951	1956	1961
	No.	No.	No.	No.	No.	No.
Newfoundland.....	70,980	78,808	87,940	5.0	5.1	5.0
Prince Edward Island.....	22,454	22,682	23,942	4.3	4.2	4.2
Nova Scotia.....	149,555	162,854	175,341	4.2	4.1	4.0
New Brunswick.....	114,007	120,475	132,715	4.4	4.5	4.4
Quebec.....	858,784	1,001,264	1,191,469	4.6	4.4	4.2
Ontario.....	1,181,126	1,392,491	1,640,881	3.8	3.8	3.7
Manitoba.....	202,398	217,964	239,754	3.7	3.7	3.7
Saskatchewan.....	221,456	233,664	245,424	3.7	3.6	3.6
Alberta.....	250,747	294,047	349,816	3.6	3.7	3.7
British Columbia.....	337,777	392,403	459,534	3.3	3.4	3.4
Yukon and Northwest Territories.....	..	6,994	7,920	..	3.8	4.2
<b>Canada.....</b>	<b>3,409,284<sup>1</sup></b>	<b>3,923,646</b>	<b>4,554,736</b>	<b>4.0<sup>1</sup></b>	<b>3.9</b>	<b>3.9</b>

<sup>1</sup> Exclusive of the Yukon and Northwest Territories.

The average size of the Canadian family\* made a further gain between 1956 and 1961, continuing the trend of the 1951-56 period. Every province except Quebec and Saskatchewan participated in this increase, as shown in Table 21.

**21.—Families and Persons per Family, by Province, Census Years 1951, 1956 and 1961**

Province or Territory	Families			Average Persons per Family		
	1951	1956	1961	1951	1956	1961
	No.	No.	No.	No.	No.	No.
Newfoundland.....	74,858	82,128	89,267	4.4	4.6	4.7
Prince Edward Island.....	21,381	21,153	21,969	4.0	4.1	4.2
Nova Scotia.....	145,127	154,243	161,894	3.9	3.9	4.0
New Brunswick.....	111,639	116,623	124,653	4.1	4.2	4.3
Quebec.....	856,041	970,414	1,103,822	4.2	4.2	4.2
Ontario.....	1,162,772	1,342,572	1,511,478	3.4	3.5	3.6
Manitoba.....	191,268	204,414	215,831	3.6	3.6	3.7
Saskatchewan.....	196,188	205,135	211,776	3.7	3.8	3.8
Alberta.....	223,326	262,922	305,671	3.7	3.7	3.8
British Columbia.....	299,845	346,003	394,023	3.3	3.4	3.6
Yukon and Northwest Territories.....	4,939	5,893	7,060	3.9	4.1	4.3
<b>Canada.....</b>	<b>3,287,384</b>	<b>3,711,500</b>	<b>4,147,444</b>	<b>3.7</b>	<b>3.8</b>	<b>3.9</b>

Closely related to the number of families per household, and also an indicator of living conditions, is the type of family. In 1961, 94.3 out of every 100 families in Canada were maintaining their own households as compared with 92.3 in 1956 and 90.2 in 1951, an apparent steady improvement in living conditions. The families not maintaining their own households fell into two main sub-categories—families related to the head of the household and non-related lodging families. The few who did not fit either of these sub-categories were mostly families of employees living in their employer's household.

There were 7,777,137 children in families in 1961. These are limited by definition to children never married and under 25 years of age who were living with their parents or guardians at the time of the census. In Table 22, the number of children is classified to show the number in each of four separate age groups corresponding roughly to pre-school-age children, those of elementary school age, those at the secondary school level, and those of college or working age.

\* A family, as defined in the census, consists of a husband and wife (with or without children who have never married) or a parent with one or more children never married, living together in the same dwelling. Adopted children and stepchildren are counted as own children and, in fact, a family may comprise a man or woman living with a guardianship child or ward under 21 years of age.

**22.—Children Living at Home classified by Age Group and by Province, Census 1961**

Province or Territory	Under 6 Years	6-14 Years	15-18 Years		19-24 Years		Total Children Living at Home
			Total	At School	Total	At School	
	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	80,245	109,020	32,582	21,004	16,827	1,522	238,674
Prince Edward Island.....	15,550	21,563	6,626	4,465	3,606	600	47,345
Nova Scotia.....	107,627	144,950	45,611	32,907	23,000	4,036	321,188
New Brunswick.....	93,231	131,102	39,668	27,329	19,746	3,660	283,747
Quebec.....	789,382	1,042,937	353,764	209,975	240,275	34,464	2,426,358
Ontario.....	874,318	1,111,981	321,482	245,421	179,622	45,625	2,487,403
Manitoba.....	127,250	169,016	51,530	39,156	26,775	5,883	374,571
Saskatchewan.....	134,502	176,645	53,033	41,991	23,396	5,736	387,576
Alberta.....	212,114	250,672	70,686	57,259	32,882	8,351	566,354
British Columbia.....	220,347	281,698	83,272	68,346	42,081	11,714	627,398
Yukon and Northwest Territories.....	7,158	6,985	1,554	861	826	91	16,523
<b>Canada.....</b>	<b>2,661,724</b>	<b>3,446,569</b>	<b>1,059,808</b>	<b>748,714</b>	<b>609,036</b>	<b>121,682</b>	<b>7,777,137</b>



Additional household and family classifications are given in the 1963-64 Year Book at pp. 180-181—families classified by age of head, and families classified by marital status and sex of family head; and in the 1965 Year Book at pp. 185-186—households classified by number of persons, households classified by number of families and by number of lodgers, and families classified by type and by province.

## Section 2.—Intercensal Surveys

Intercensal estimates of the population of Canada, of the provinces classified by sex and by age group, and of the major cities and metropolitan areas are constructed as of June 1 each year. These estimates are calculated using the preceding census counts, the annual birth, death and immigration records and other pertinent data on emigration and interprovincial shifts. Following each census, the previous post-censal estimates are adjusted to the newly recorded population figures.

Because of the impending availability of the 1966 Census figures and therefore the early adjustment of the 1962-65 population estimates, intercensal data are not included in this edition of the Year Book. The 1966 population figures obtainable at the time of going to press will be included in Appendix II.

## Section 3.—The Native Peoples of Canada

### The Indians\*

More than 217,000 Canadians are registered as Indians by the Indian Affairs Branch of the Department of Indian Affairs and Northern Development. Registered Indians include all persons descended in the male line from a paternal ancestor of Indian identity, who have chosen to remain under Indian legislation. They are grouped, for the most part, into 551 bands and occupy or have access to 2,269 reserves or settlements having a total area of 5,976,317 acres.

### 23.—Indian Land in Reserves and Settlements and Number of Bands, by Province, as at Mar. 31, 1966

Province or Territory	Bands	Settlements		Reserves		Total Area
	No.	No.	acres	No.	acres	acres
Prince Edward Island.....	1	—	—	4	2,741	2,741
Nova Scotia.....	11	—	—	38	25,571	25,571
New Brunswick.....	15	—	—	23	37,655	37,655
Quebec.....	35	13	7,241	26	180,937	188,178
Ontario.....	112	4	378	166	1,539,473	1,539,851
Manitoba.....	51	—	—	101	522,199	522,199
Saskatchewan.....	67	—	—	123	1,225,090	1,225,090
Alberta.....	41	4	217	92	1,607,480	1,607,697
British Columbia.....	188	—	—	1,620	820,348	820,348
Yukon Territory.....	15	26	4,844	—	—	4,844
Northwest Territories.....	15	29	2,143	—	—	2,143
<b>Totals.....</b>	<b>551</b>	<b>76</b>	<b>14,823</b>	<b>2,193</b>	<b>5,961,494</b>	<b>5,976,317</b>

A Departmental census of Indian population is taken every five years and the numbers recorded at the three latest censuses—1949, 1954 and 1959—are given in Table 24; the figures for 1961, 1963 and 1965 are taken from data kept for administrative purposes by the Indian Affairs Branch.

\* Revised in the Indian Affairs Branch, Department of Indian Affairs and Northern Development, Ottawa.

**24.—Indian Population, by Province, Departmental Censuses 1949, 1954 and 1959  
and Estimates 1961, 1963 and 1965**

Province or Territory	1949	1954	1959 <sup>1</sup>	1961 <sup>1</sup>	1963 <sup>1</sup>	1965 <sup>1</sup>
	No.	No.	No.	No.	No.	No.
Prince Edward Island.....	273	272	341	348	374	394
Nova Scotia.....	2,641	3,002	3,561	3,746	3,935	4,102
New Brunswick.....	2,139	2,629	3,183	3,397	3,629	3,808
Quebec.....	15,970	17,574	20,453	21,793	23,043	24,448
Ontario.....	34,571	37,255	42,668	44,942	47,260	49,458
Manitoba.....	17,549	19,684	23,658	25,681	27,778	29,957
Saskatchewan.....	16,208	18,750	23,280	25,334	27,672	29,996
Alberta.....	13,805	15,715	19,287	20,931	22,738	24,596
British Columbia.....	27,936	31,086	36,229	38,616	40,990	43,250
Yukon Territory.....	1,443	1,568	1,868	2,006	2,142	2,352
Northwest Territories.....	3,772	4,023	4,598	4,915	5,235	5,503
<b>Totals.....</b>	<b>136,407</b>	<b>151,558</b>	<b>179,126</b>	<b>191,709</b>	<b>204,796</b>	<b>217,864</b>

<sup>1</sup> As at Dec. 31.

**Administration.**—Pursuant to the British North America Act, the administration of Indian affairs, which had been under the management of several provinces, came under the jurisdiction of the Government of Canada in 1867. From January 1950 to December 1965, Indian affairs were the responsibility of a Branch of the Department of Citizenship and Immigration. In June 1966 (SC 1966, c. 25) a new department was formed whereby the Indian Affairs Branch joined with part of the Department of Northern Affairs and National Resources to become the Department of Indian Affairs and Northern Development.

The Indian Affairs Branch is composed of a headquarters staff at Ottawa, eight regional offices and 84 field agencies. Attached to the headquarters and regional offices are specialists in such matters as education, economic development, community development, resource management, social welfare, and engineering and construction. Liaison is maintained with the Medical Services Directorate of the Department of National Health and Welfare, the federal agency concerned with the medical care of Indians.

It is the primary function of the Indian Affairs Branch to administer the affairs of Indians in a manner that will enable them to participate fully in the social and economic life of the country. Underlying administrative duties of the Branch include the management of Indian reserves and surrendered lands, the administration of band funds, estates management, enfranchisement of Indians and the administration of treaty obligations.

Five main objectives are being pursued vigorously in an attempt to assist the Indians in adjusting to the pace of social and economic growth. (1) An accelerated program in education places more emphasis on vocational training, retraining for employment, assistance in placement, adult education, kindergartens and a greater use of provincial schools. (2) The program of industrial and resource development has been expanded; in the past the program was mainly dependent on the traditional resources of fur, fish, forestry and farming but opportunities are now being extended to new areas by loans and other incentives to foster industrial development on the reserves and to facilitate the relocation of families to places where full-time employment is available. (3) A five-year program of reserve improvement has been instituted for which \$112,000,000 has been allotted to provide better housing, water and sewerage systems, electrification and roads. (4) To develop local self-government, Indian bands, where possible, are encouraged to operate on the same basis as local municipalities and grants are given where they are required to meet some of the financial needs of the Indian community. (5) Provincial services to Indians are being extended; some provincial services are now provided and, where bands so desire, arrangements can be made with a province to make additional services available.

Eight Regional Indian Advisory Councils have been established by the Department to provide machinery for effective consultation with representatives of the Indian people. Each Council is composed of eight to 12 Indians elected by the bands in the region, as well as representatives of Indian organizations. The consultation procedure is used to interpret

federal policies and to obtain Indian views on matters of policy, proposed legislation, federal-provincial agreements, new programs and proposals to change existing programs. A National Indian Advisory Board has also been formed as a means of bringing together Indians representing all regions. It is made up of 18 representatives who are named by the Regional Councils on a population basis. The function of the Board is to advise the Department on matters of national importance to the Indian people as distinct from matters of regional interest. In addition, Federal-Provincial Co-ordinating Committees have been established and are in operation in most provinces. They meet fairly regularly, some as often as once a month, and perform an important function in guiding the plans and programs of the federal and provincial governments in relation to Indians, and in establishing effective liaison between the governments and a better understanding of their respective objectives, policies and programs.

**Education.**—This major key to continued Indian progress receives ever-increasing support from Indian parents, from their school committees, from non-federal governments and from professional groups specifically concerned with classroom instruction of Indian pupils. The Indian Affairs Branch maintains and operates a number of schools for Indians, but 29,355 of the 61,395 Indian elementary and secondary school population attend non-federal schools. Attendance of Indians at non-federal schools has been arranged, for the most part, through agreements between the Branch and individual school boards. In 1964, however, an agreement was concluded with the Province of Manitoba to provide for a uniform tuition fee to be paid by the Branch for Indian pupils attending schools under the jurisdiction of that province. Manitoba also passed legislation to give Indian children the right to attend any non-federal school.

There are three types of federal schools, all operated at the expense of the Federal Government. On many reserves, day schools provide education for children who live at home. Residential schools care for orphaned children, children from broken homes and for those who, because of isolation or for other reasons, are unable to attend day schools. The third type of school gives instruction to children confined to hospital. All standard classroom supplies and authorized textbooks are used in federal schools, which follow generally the curriculum of the province in which they are located. Financial assistance for pupils attending non-federal schools varies from payment of tuition fees to full maintenance. Promising senior students are awarded scholarships to attend university or vocational school and scholarships are given to those who show promise in the arts.

**25.—Enrolment of Indian Pupils in Elementary and Secondary Schools classified by Type of School and by Grade, School Years Ended 1962-66**

Year and Type of School	Grade				Special	Absent from Reserve <sup>1</sup>	Total
	Pre-1	1-6	7-8	9-13			
	No.	No.	No.	No.	No.	No.	No.
1961-62.....	3,560	32,746	5,698	3,381	739	1,616	47,740
Federal.....	3,403	24,256	3,361	596	739	—	32,355
Non-federal.....	157	8,490	2,337	2,785	—	1,616	15,385
1962-63.....	3,759	34,035	5,772	3,830	590	1,924	49,910
Federal.....	3,407	24,262	3,004	737	590	—	32,000
Non-federal.....	352	9,773	2,768	3,093	—	1,924	17,910
1963-64.....	3,897	35,453	6,161	4,065	770	4,575	54,921
Federal.....	3,575	24,791	3,089	750	508	—	32,711
Non-federal.....	322	10,662	3,072	3,315	262	4,575	22,210
1964-65.....	4,027	36,229	6,758	4,761	804	4,686	57,265
Federal.....	3,422	24,067	3,292	768	509	—	32,058
Non-federal.....	605	12,162	3,466	3,993	295	4,686	25,207
1965-66.....	3,660	38,929	7,107	5,220	1,013	5,466	61,395
Federal.....	3,093	24,566	3,203	716	462	—	32,040
Non-federal.....	667	14,363	3,904	4,504	551	5,466	29,355

<sup>1</sup> Pupils (and parents) living off the reserves in communities with educational facilities usually attend non-federal schools but school records are not maintained by the Indian Affairs Branch.



**26.—Enrolment of Elementary and Secondary Indian Pupils in Non-federal<sup>1</sup> Schools classified by Grade and by Province, School Year 1965-66**

Grade	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Pre-grade 1.....	—	28	—	73	128	17	26	40	133	—	122	567
Grade—												
1.....	—	38	19	182	442	359	561	507	593	118	203	3,022
2.....	—	30	14	177	457	265	414	397	493	59	178	2,484
3.....	—	30	22	157	453	311	352	357	445	62	123	2,312
4.....	1	35	41	144	445	268	292	297	451	46	154	2,174
5.....	—	25	48	180	454	276	267	308	483	77	120	2,238
6.....	1	26	37	261	434	208	274	289	451	59	93	2,133
7.....	—	26	45	197	453	198	258	324	427	50	75	2,053
8.....	—	41	31	276	398	112	157	260	488	43	45	1,851
9.....	4	54	44	176	637	163	216	331	402	26	38	2,091
10.....	1	21	18	105	392	96	111	132	295	18	31	1,220
11.....	—	13	12	69	208	61	61	84	158	6	13	685
12.....	—	1	7	8	137	32	66	83	114	2	11	461
13.....	—	—	—	—	31	—	—	—	16	—	—	47
Special.....	—	1	—	5	64	15	59	37	290	27	53	551
Absent from reserve.....	30	50	102	485	2,000	449	737	300	1,300	13	—	5,466
<b>Totals.....</b>	<b>37</b>	<b>419</b>	<b>440</b>	<b>2,495</b>	<b>7,133</b>	<b>2,830</b>	<b>3,851</b>	<b>3,746</b>	<b>6,539</b>	<b>606</b>	<b>1,259</b>	<b>29,355</b>

<sup>1</sup> Provincial, private and territorial schools.

**27.—Indian Students in Post-Secondary and Vocational Training,  
School Year 1965-66**

Course of Study	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
University.....	—	14	3	39	18	4	9	11	32	1	—	131
Teacher training colleges.....	—	—	1	10	7	—	—	—	—	—	—	18
Nurse's training	—	1	1	3	10	—	3	2	4	—	—	24
Vocational.....	1	25	15	181	389	125	114	49	294	40	1	1,244
Upgrading.....	2	—	12	2	352	144	52	10	135	17	—	726
<b>Totals.....</b>	<b>3</b>	<b>40</b>	<b>32</b>	<b>235</b>	<b>776</b>	<b>283</b>	<b>178</b>	<b>72</b>	<b>465</b>	<b>58</b>	<b>1</b>	<b>2,143</b>

**Resources and Industrial Development.**—In the field of renewable resource development programs for Indians, co-operation between the provinces and the Indian Affairs Branch, both formal and informal, continued during 1965-66. A greater demand for Canadian wild fur, mainly by European interests, together with a particular interest in long-hair species such as fox and lynx, resulted in substantially higher prices and therefore more revenue to the Indian trappers, giving them an incentive to increase their catch. Commercial fishing operations by Indians continued to yield about 2,000,000 lb. and higher prices were received for certain species, notably yellow pickerel. Products from the forests of the reserves included about 90,000,000 ft. b.m. of lumber, 65,000 cords of pulpwood, 1,000,000 fence posts and 900,000 Christmas trees. During the year, agreements were arranged with the provinces to give better fire protection to these valuable forest resources. It should be noted here that assistance is given to Indian forest workers for training purposes so that they may participate to a greater extent in mechanized forest operations off the reserves. Oil and gas produced from Indian reserves during 1965-66 had an estimated value of \$10,500,000 and revenues to Indian bands from royalties, bonuses and rentals for petroleum leases amounted to \$4,567,000. It is known that many Indian reserves have considerable mining potential which is now beginning to be exploited.

With the consent and participation of the bands concerned, surveys are being undertaken to establish present and potential use of reserve lands. Where required, Indians are being trained to exploit and manage their own lands and are assisted in acquiring the equipment necessary for such development. Greater interest is being shown by many bands in utilizing their reserve lands for industrial and commercial purposes and the development of resources on or near reserves is leading to the formation of co-operatives and other processing facilities at more remote reserves. The adaptation of Indian people to Canadian industrial and business life is encouraged, in their reserve communities, by financial and professional help in operating small businesses.

Under a community employment program, opportunities are provided for the Indian people to acquire knowledge and experience in the duties and responsibilities of self-government, to acquire the ability to develop the resources and improve the public areas on their reserves and to become oriented to wage employment. During 1965-66, 491 projects costing \$1,277,010 were financed under this program.

Employment assistance officers promote Indian employment and vocational training measures in a wide range of occupations. The program includes on-the-job and in-service training to equip Indians for employment in skilled, semi-skilled, clerical and administrative classifications, as well as financial assistance to help defray the expenses they encounter as they enter full-time employment, for such items as tools, clothing, room and board, etc.

In 1965-66, Indian people produced about \$1,200,000 worth of handicraft items for sale and for their own use. Interest in their traditional crafts and expanding markets is bringing about a steady growth in this important industry and to encourage this source of revenue the Indian Affairs Branch maintains a marketing and advisory service, conducts national promotional programs and gives technical and financial assistance. Many Indian people have established successful enterprises based on the production and sale of arts and crafts.

**Community Development.**—During 1965-66, under the community development program of the Indian Affairs Branch, efforts of the Indian communities were mobilized with those of the government for the benefit of the Indian people. During the year, Branch officers were trained in community development techniques and practices; the number on strength at Mar. 31, 1966 was 57. Several provinces participated in community development on a project basis, with the Federal Government sharing the costs to the extent of \$226,634. Grants were made available to Indian bands lacking funds, in order that they might, on their own initiative, plan projects, manage the finances required and effect social, economic and physical improvement on their reserves. A major use of the grants will be to hire, train and employ band civil servants; 19 were hired during 1965-66, including managers, secretaries, road foremen, special constables and welfare administrators.

A program was started in 1965 to develop and perpetuate Indian culture through encouraging Indian arts and fine crafts, literature, dancing, folk songs and related activities. Incentives include grants, subsidies and scholarships to individuals, groups and organizations for the development of their creative and performing talents.

**Physical Development of Reserves.**—Early in 1966 a plan was announced by the Federal Government for the expenditure of \$112,000,000, over a five-year period, for the physical improvement of Indian reserves. The program provides for assistance for housing, safe water supply, sanitation facilities, electrification of homes and improved roads in Indian communities. Following a study of housing conditions on reserves, completed in February 1965, it was indicated that there was a need for 12,000 new homes. The objective of the program is to build these homes with about \$75,000,000 in public funds joined with

band funds and personal contributions; 1,500 will be constructed in 1966-67. Some \$10,000,000 will be spent to supply safe drinking water and proper sewage disposal and a rural electrification program is being undertaken, using public utilities wherever possible, at a cost of about \$7,000,000. The remainder will go toward providing better roads. Expenditures on these projects during 1966-67 will amount to \$13,276,545.

**Welfare.**—The provision of general welfare assistance and services to indigent Indians is an essential factor in assisting them to raise their social and economic status. The welfare program administered by the Indian Affairs Branch includes public assistance (food, clothing and shelter) to dependent Indians and certain categories of non-Indians living on reserves, care and maintenance of children and adults, and rehabilitation services for physically and/or socially handicapped Indians. Since January 1965 the Branch has adopted the same rates of assistance and the same eligibility conditions as apply to other recipients of public assistance in the Northwest Territories, British Columbia, Alberta, Saskatchewan, Manitoba and Ontario. The scale of food assistance established by the Branch continues in Quebec and the Maritime Provinces.

As there is no specific federal welfare legislation in respect to Indians, the Indian Affairs Branch relies on provincial welfare legislation and provincially accredited welfare agencies for the enforcement of such legislation. In the field of child welfare, the Federal Government has entered into agreement with 25 children's aid societies in Ontario whereby Indian children may receive the same services as non-Indians in accordance with provincial child welfare legislation. There are similar agreements with the Governments of Manitoba and Nova Scotia. The Indian Affairs Branch assumes financial responsibility for both the administrative and maintenance costs of Indian children who are placed in the care of such agencies. Some provinces provide services on a voluntary basis and, by informal arrangements, the Federal Government pays the cost of maintenance of children placed in foster homes or institutions. Where such services are not available, Indian Affairs Branch staff, with the consent of parents or guardians, arrange for care of neglected children in foster homes or institutions. The Branch provides maintenance and care in homes for the aged and other institutions for physically and socially handicapped adults who do not require active medical treatment.

In general, provincial rehabilitation programs are extended to handicapped Indians on the same basis as to non-Indians. Under separate agreements with the Alberta Tuberculosis Association, the Saskatchewan Society of Crippled Children and Adults and the Manitoba Sanatorium Board, the Federal Government assumes financial responsibility for full maintenance and tuition on behalf of Indian students participating in upgrading and social orientation programs in these provinces. The Federal Government is negotiating cost-sharing agreements with provinces to provide Indian residents the full range of welfare programs administered by provincial governments. A welfare agreement between the Government of Ontario and the Federal Government allows for the inclusion of Indians in the established welfare program of that province.

In addition to the extensive welfare program for Indians financed and administered by the Indian Affairs Branch, welfare services and social benefits available to Indians in Canada include: (1) programs under which Indians are eligible for such categorical benefits as family allowances, youth allowances and old age security, administered by the Department of National Health and Welfare; (2) programs financed jointly by federal and provincial governments and administered by provincial governments, such as old age assistance and blind and disabled persons' allowances; and (3) specific programs established by provincial governments—in Ontario, Indian women may receive mothers' allowances and assistance to widows and unmarried women; indigent Indian mothers in Quebec are eligible for needy mothers' allowances; and, upon application, abandoned children and adult Indians in Nova Scotia receive certain benefits in accordance with the Nova Scotia Social Assistance Act.



### The Eskimos\*

There are altogether about 13,000 Eskimos in Canada, spread out over the Northwest Territories, Arctic Quebec and Labrador. Although many of them still depend to a great extent on game and fish for subsistence, they have enjoyed marked improvement in their circumstances in the past ten years. Their traditional nomadic way of life is giving way to that of a more settled wage-earner and they are becoming established in permanent communities where opportunities are greater for education, health services and employment. In addition to those self-employed in such activities as fishing, hunting and trapping, many of whom are members of co-operatives, Eskimos are working in a variety of fields—as civil servants, clergymen, aircraft pilots, miners, carpenters, mechanics, diesel and tractor operators and oil drillers. An Eskimo manages the CBC radio station at Inuvik and another produces Eskimo-language programs for the CBC Northern Service. Eskimo women work as interpreters, waitresses, nursing assistants, secretaries and clerks, in southern as well as northern communities. However, the number in actual wage-earning employment is as yet relatively small and it is the Federal Government's role to prepare, through education, as many of them as wish to do so to enter wage-earning employment and, so that wage-earning opportunities will be available to them, to create a kind of economic climate in the North which will encourage private enterprise to invest in the development of the vast resources of that area. Various federal programs of highway, access road and air-strip construction, resources cataloguing, provision of bulk oil storage facilities and cheap power are under way to assist in this objective.

In satisfying the first primary need of the Eskimo—the safeguarding of his life—the Department of Indian Affairs and Northern Development is now in reasonably regular contact with most of the Eskimo people, even though a good portion of them still follow their nomadic habits. The full range of social services applicable to all Canadians is extended to the Eskimos. Medical care provided for them through the years has been such that the annual natural increase among them is now between 3 and 4 p.c., indicating that the Eskimo population will double in a period of about 20 years. The increasing size of families and the general movement toward living in settlements in many areas have created a need for permanent housing. Through a loans and grants program, initiated in 1959, Eskimos are encouraged to buy their own homes. A \$1,000 or \$2,000 subsidy, depending on the size of the house, covers part of the cost of construction and the owner may borrow the remainder from the Eskimo Loan Fund and repay it on terms adjusted to his income. A man's labour in building his home reduces the total cost. Through this program, basic housing has been provided for more than 1,000 Eskimo families but, because the need is still great and urgent, a new four-year rental housing program was started in late 1965 under which 1,600 houses will be built over a five-year period at a cost of \$12,000,000. The houses will include one, two and three bedroom designs and will be available at rentals that will cover basic furnishings, heat, electricity, water and sewage and garbage services. The rent to be paid will be determined by the family's ability to pay and the difference will be absorbed by the Government. The families in rented houses will be credited with the value of the householder's labour in the construction, maintenance and improvement of his house. In addition, to enable a family to acquire ownership of a rental house, one third of all rent paid can be applied toward its purchase when the family is ready to take this step.

The second need of the Eskimo is education and training—to give him a better chance in competing for employment, to give those with the interest and ability an opportunity to take their proper place as leaders in their home communities or elsewhere, or to give those who will follow the traditional way of life a more meaningful and satisfying existence. The number of schools in the North has grown from 11 in 1952 to 64 at the end of 1965 and a program for construction of school facilities—elementary, secondary, vocational and pre-school—is under way. By 1971, 132 new classrooms, 64 auxiliary rooms and 54 classroom replacements will have been built, as well as facilities to house 1,550 resident students

\* Revised in the Information Services Division, Department of Indian Affairs and Northern Development, Ottawa.

and about 200 school staff members. More than 3,000 young Eskimos attend the present 64 schools, which they share with all other children who live in the North; over 85 p.c. of the school-age population of the Northwest Territories is now in school. Provincial curricula are used but are adapted by committees of experienced northern teachers to relate more closely to those things that are meaningful to northern students. A large number of texts and course outlines have been tailored to the northern scene and a standard Roman orthography has been devised for the Eskimo language. There are Eskimo children in all the high school grades in the Mackenzie District and a few at the high school level in the Eastern Arctic. A program of grants and loans to finance university education for Eskimo, Indian and white children, approved by the Northwest Territories Council in 1963, assures higher education for those who qualify. Vocational education courses with full financial assistance are available at all levels both in the Territories and, by agreement, at various technical institutions in the provinces. At present there are about 400 Eskimos taking advantage of these programs. To provide more skilled workers and raise occupational standards in the North, an apprentice training program was begun in 1964; at present, almost 30 Eskimos are apprenticed in skilled trades. Selection and placement officers are located at the five largest centres in the North, working in close co-operation with the Canada Manpower Division of the Department of Manpower and Immigration. They select people for training to meet the specific requirements of employers, place people in employment and offer counselling service to new employees.

To aid the Eskimos who will continue to live off the land either by choice or by necessity, area economic surveys are conducted to determine what resources are exploitable locally, followed by development programs to take advantage of these resources. In this way, commercial fisheries, logging operations, fur garment manufacturing, specialty food processing and arts and crafts have been undertaken in a number of Eskimo communities.

Eskimo co-operatives have developed very rapidly; there are now 22 co-operatives engaged in commercial fishing, fine crafts, graphic art and sculpture, the operation of retail stores, logging and boat-building and, at Frobisher Bay and Inuvik, groups of Eskimo families have formed housing co-operatives. Products from the co-operatives are maintaining the Eskimos' reputation as skilled artists and craftsmen. The West Baffin Eskimo Co-operative, which produces graphic art, has established Cape Dorset as an art centre of distinction and interesting prints are also produced at Povungnituk, Holman Island and Baker Lake. Soapstone sculptures from Povungnituk, Grise Fiord and Igloolik are well known and Eskimo craftsmen living at Baker Lake, Rankin Inlet, Coppermine, Resolute and Great Whale River are producing a wide range of original and attractive articles. The fishery co-operatives at George River in the Northwest Territories have found ready and profitable markets for their catches of Arctic char. Ookpik, a shaggy little sealskin owl produced by Mrs. Jeannie Snowball of the Fort Chimo Co-operative in 1963 was chosen by the Department of Trade and Commerce as the symbol for Canada Week at the Philadelphia Trade Fair. He was a sensation and received much publicity. He was registered under the trade marks and patent laws to protect Mrs. Snowball and the co-operatives, and licensing agreements with manufacturing firms in Southern Canada have created a major source of revenue for this co-operative.

#### Section 4.—Statistics of World Population

World population figures given in Table 28 are from the *United Nations Population and Vital Statistics Report* for January 1966 and, except as otherwise noted, are mid-year estimates for 1964. The area figures are from the *United Nations Statistical Yearbook 1965*.

**Estimated Population of the World by Continents.**—The following statement presents adjusted estimates of the 1964 mid-year population of the world by continental divisions. These aggregates do not coincide exactly with the sum of the figures for individual countries because they include, in addition, adjustments for over- and under-

enumeration, over-estimation, data for categories of population not regularly included in the official figures, and approximations for the countries that have not provided official 1964 data. The estimates are as follows:—

<i>Continental Division</i>	<i>Population</i>
	'000
Africa.....	304,000
North America.....	286,000
South America.....	162,000
Asia.....	1,780,000
Europe.....	443,000
Oceania.....	17,000
Union of Soviet Socialist Republics.....	228,000
WORLD TOTAL.....	3,220,000
Commonwealth countries (as at June 30, 1966).....	802,896

## 28.—Areas and Populations of the Countries or Areas of the World

NOTE.—Status of independency or dependency is as at June 30, 1966. Members of the Commonwealth and countries for which the British or Commonwealth members are responsible (June 30, 1966) are indicated with an asterisk (\*).

Continent and Country	Area	Population
	sq. miles	'000
<b>Africa</b>		
<b>SOVEREIGN COUNTRIES</b>		
Algeria.....	919,595	10,975
Burundi.....	10,747	2,500
Cameroon.....	183,569	5,103
Central African Republic.....	240,535	1,320
Chad.....	495,755	3,300 <sup>1</sup>
Congo (Brazzaville).....	132,047	826
Congo, Democratic Republic of.....	905,568	15,300
Dahomey.....	43,484	2,300 <sup>2</sup>
Ethiopia.....	471,778	22,200
Gabon.....	103,347	459
*Gambia.....	4,361	324
*Ghana.....	92,100	7,537
Guinea.....	94,926	3,420
Ivory Coast.....	124,594	3,750
*Kenya.....	224,960	9,104
Liberia.....	43,000	1,041
Libya.....	679,362	1,559
Madagascar.....	230,036	6,180
*Malawi.....	46,066	3,990
Mali.....	463,950	4,485
Mauritania.....	419,232	900 <sup>2</sup>
Morocco.....	171,835	12,959
Niger.....	489,191	3,250
*Nigeria.....	356,669	56,400
Rwanda.....	10,169	3,018 <sup>2</sup>
Senegal.....	75,750	3,400
*Sierra Leone.....	27,699	2,200
Somalia.....	246,202	2,350
South Africa, excl. Walvis Bay.....	471,445	17,474
Sudan.....	967,500	13,180
Togo.....	21,853	1,603
Tunisia.....	63,379	4,565
*Uganda.....	91,134	7,367
United Arab Republic.....	386,102	28,900
*United Republic of Tanzania—		
Tanganyika.....	361,800	9,990
Zanzibar.....	1,020	335
Upper Volta.....	105,889	4,750
*Zambia.....	290,586	3,600

For footnotes, see end of table, p. 214.



## 28.—Areas and Populations of the Countries or Areas of the World—continued

Continent and Country	Area	Population
	sq. miles	'000
<b>Africa—concluded</b>		
<b>NON-SOVEREIGN COUNTRIES</b>		
Angola (Port.).....	481,354	5,084
*Basutoland (U.K.).....	11,716	733
*Bechuanaland (U.K.).....	219,916	543
Cape Verde Islands (Port.).....	1,557	220
Comoro Islands (Fr.).....	838	210
Equatorial Guinea (Sp.).....	10,831	263
Fernando Póo.....	785	70
Río Muni.....	10,045	199
French Somaliland (Fr.).....	8,494	81
French Southern and Antarctic Territories (Fr.).....	2,918	3
Ini (Sp.).....	579	52
*Mauritius, incl. dependencies (U.K.).....	809	742
Mozambique (Port.).....	302,330	6,872
Portuguese Guinea (Port.).....	13,948	525
Réunion (Fr.).....	969	382
*Rhodesia (U.K.).....	150,333	4,140
*St. Helena, excl. dependencies (U.K.).....	47	5
Ascension.....	34	3
Tristan da Cunha.....	40	3
São Tomé and Príncipe (Port.).....	372	56
*Seychelles (U.K.).....	156	46
South West Africa, incl. Walvis Bay (S.A.).....	318,261	564
Spanish North Africa (Sp.).....	12	157
Spanish Sahara (Sp.).....	102,703	48
*Swaziland.....	6,704	285
<b>America, North</b>		
<b>SOVEREIGN COUNTRIES</b>		
*Canada.....	3,851,809	19,271
Costa Rica.....	19,575	1,387
Cuba.....	44,218	7,434
Dominican Republic.....	18,816	3,452
El Salvador.....	8,260	2,824
Guatemala.....	42,042	4,305
Haiti.....	10,714	4,551
Honduras.....	43,277	2,092
*Jamaica.....	4,232	1,739
Mexico.....	761,604	39,643
Nicaragua.....	53,938	1,597
Panama, excl. Canal Zone.....	29,209	1,210
Canal Zone.....	553	54
*Trinidad and Tobago.....	1,980	949
United States of America.....	3,615,211	192,119
<b>NON-SOVEREIGN COUNTRIES</b>		
*Antigua (U.K.).....	171	60
*Bahama Islands (U.K.).....	4,403	134
*Barbados (U.K.).....	166	242
*Bermuda (U.K.).....	20	48
*British Honduras (U.K.).....	8,867	103
*Cayman Islands (U.K.).....	100	9
*Dominica (U.K.).....	290	64
Greenland (Den.).....	840,004	37
*Grenada (U.K.).....	133	93
Guadeloupe (Fr.).....	687	306
Martinique (Fr.).....	425	310
*Montserrat (U.K.).....	38	13
Netherlands Antilles (Neth.).....	371	205
Puerto Rico (U.S.).....	3,435	2,584
*St. Kitts-Nevis-Anguilla (U.K.).....	138	59
*St. Lucia (U.K.).....	238	92
St. Pierre and Miquelon (Fr.).....	93	5

For footnote, see end of table, p. 214.

## 28.—Areas and Populations of the Countries or Areas of the World—continued

Continent and Country	Area	Population
	sq. miles	'000
<b>America, North—concluded</b>		
NON-SOVEREIGN COUNTRIES—concluded		
*St. Vincent (U.K.).....	150	85
*Turks and Caicos Islands (U.K.).....	166	6
*Virgin Islands (U.K.).....	59	8
Virgin Islands (U.S.).....	133	41
<b>America, South</b>		
SOVEREIGN COUNTRIES		
Argentina.....	1,072,073	22,022
Bolivia.....	424,165	3,653
Brazil.....	3,286,488	78,809 <sup>a</sup>
Chile.....	286,398	8,492
Colombia.....	439,515	17,482
Ecuador.....	109,484	4,881 <sup>b</sup>
*Guyana (formerly British Guiana).....	83,000	629
Paraguay.....	157,048	1,968
Peru.....	496,224	11,298 <sup>a</sup>
Uruguay.....	72,173	2,682
Venezuela.....	352,145	8,427 <sup>a</sup>
NON-SOVEREIGN COUNTRIES		
*Falkland Islands, excl. dependencies (U.K.).....	4,618	2
French Guiana (Fr.).....	35,135	36
Surinam (Neth.).....	55,144	325 <sup>c</sup>
<b>Asia</b>		
SOVEREIGN COUNTRIES		
Afghanistan.....	250,000	15,227
Bahrain.....	231	175
*Bhutan.....	18,147	750
Burma.....	261,790	24,229
Cambodia.....	69,898	6,200
*Ceylon.....	25,332	10,965
China (mainland).....	3,691,523	686,000
China (Taiwan and Pescadores).....	13,885	12,070
*Cyprus.....	3,572	587
*India <sup>7</sup> .....	1,176,157	471,624
Indonesia, excl. West Irian.....	575,896	102,200
West Irian.....	159,376	800
Iran.....	636,296	22,860
Iraq.....	173,260	7,004
Israel.....	7,992	2,476
Japan.....	142,727	96,906
Jordan.....	37,738	1,898
Korea.....	85,032 <sup>a</sup>	39,433
North Korea.....	46,540	11,800
Republic of Korea.....	38,004	27,633
Kuwait.....	6,178	426
Laos.....	91,429	1,960
Lebanon.....	4,015	2,250
*Malaysia—		
Malaya.....	50,700	7,810
Sabah.....	29,388	507
Sarawak.....	48,342	820
Maldives Islands.....	115	95
Mongolia.....	592,667	1,050
Muscat and Oman.....	82,000	565
Nepal.....	54,362	9,920
*Pakistan <sup>7</sup> .....	365,529	100,762

For footnotes, see end of table, p. 214.

## 28.—Areas and Populations of the Countries or Areas of the World—continued

Continent and Country	Area	Population
	sq. miles	'000
<b>Asia—concluded</b>		
<b>SOVEREIGN COUNTRIES—concluded</b>		
Philippines.....	115,831	31,270
Qatar.....	8,500	60
Saudi Arabia.....	870,004	6,630
*Sikkim.....	2,744	173
*Singapore.....	224	1,820
Syria.....	71,498	5,399
Thailand.....	198,457	29,700
Trucial Oman.....	32,278	111
Turkey.....	301,382	30,677
In Asia.....	292,261	28,155
In Europe.....	9,121	2,522
Viet-Nam—		
North Viet-Nam.....	61,294	17,900
Republic of Viet-Nam.....	65,949	15,715
Yemen.....	75,290	5,000
<b>NON-SOVEREIGN COUNTRIES</b>		
*Aden and the Protectorate of South Arabia (U.K.)—		
Aden (U.K.).....	75	231
Protectorate of South Arabia (U.K.).....	111,001	888
Bonin Islands (U.S. military).....	40	3
*Brunei (U.K.).....	2,226	97
*Hong Kong (U.K.).....	398	3,692
Macau (Port.).....	6	174
Palestine (former mandated territory U.K.).....	10,460	1,912 <sup>9</sup>
Gaza Strip.....	78	410
Portuguese Timor (Port.).....	5,763	543
Ryukyu Islands (U.S. military).....	848	927
<b>Europe</b>		
<b>SOVEREIGN COUNTRIES</b>		
Albania.....	11,100	1,814
Andorra.....	175	11
Austria.....	32,374	7,215
Belgium.....	11,781	9,378
Bulgaria.....	42,730	8,144
Czechoslovakia.....	49,371	14,058
Denmark.....	16,619	4,720
Finland.....	130,120	4,580
France (Metropolitan).....	211,208	48,417
Germany—		
Eastern Germany.....	41,659	16,000
Federal Republic of Germany.....	95,743	56,097
East Berlin.....	156	1,068
West Berlin.....	186	2,193
Greece.....	50,944	8,510
Holy See.....	10	1
Hungary.....	35,919	10,120
Iceland.....	39,769	189
Ireland.....	27,135	2,849
Italy.....	116,304	51,090
Liechtenstein.....	61	18
Luxembourg.....	998	328
*Malta.....	122	324
Monaco.....	10	23
Netherlands.....	12,978	12,127
Norway.....	125,182	3,694
Poland.....	120,665	31,161
Portugal, incl. the Azores and Madeira Islands.....	35,510	9,106
Romania.....	91,699	18,927
San Marino.....	24	17
Spain, incl. the Balearic and Canary Islands.....	194,884	31,339

For footnotes, see end of table, p. 214.



## 28.—Areas and Populations of the Countries or Areas of the World—concluded

Continent and Country	Area	Population
	sq. miles	'000
<b>Europe—concluded</b>		
SOVEREIGN COUNTRIES—concluded		
Sweden.....	173,666	7,661
Switzerland.....	15,941	5,874
*United Kingdom of Great Britain and Northern Ireland.....	94,221	54,066
England and Wales.....	68,348	47,401
Northern Ireland.....	5,462	1,468
Scotland.....	30,411	5,206
Yugoslavia.....	98,766	19,279
NON-SOVEREIGN COUNTRIES		
*Channel Islands (U.K.).....	75	110
Faeroe Islands (Den.).....	540	36
*Gibraltar (U.K.).....	2	24
*Isle of Man (U.K.).....	227	48
Svalbard and Jan Mayen Islands (Nor.).....	24,101	1 <sup>11</sup>
<b>Oceania</b>		
SOVEREIGN COUNTRIES		
*Australia, excl. aborigines.....	2,967,894	11,136
*New Zealand.....	103,736	2,594
*Western Samoa.....	1,097	122
NON-SOVEREIGN COUNTRIES		
American Samoa (U.S.).....	76	23
*British Solomon Islands (U.K.).....	11,500	133
*Canton and Enderbury (U.K. and U.S.).....	27	3
*Christmas Island (Aust.).....	52	1
*Cocos (Keeling) Islands (Aust.).....	5	20
*Cook Islands (N.Z.).....	90	449
*Fiji Islands (U.K.).....	7,015	82
French Polynesia (Fr.).....	1,544	52
*Gilbert and Ellice Islands (Br.).....	342	72
Guam (U.S.).....	212	8
*Nauru (Aust., N.Z. and U.K.).....	8	5
New Caledonia (Fr.).....	7,202	89
*New Guinea (Aust.).....	92,160	1,539
*New Hebrides (U.K. and Fr.).....	5,700	66
*Niue (N.Z.).....	100	5
*Norfolk Island (Aust.).....	14	1
Pacific Islands (U.S.).....	687	88
*Papua (Aust.).....	86,100	562
*Pitcairn (U.K.).....	2	3
*Tokelau Islands (N.Z.).....	4	2
*Tonga (U.K.).....	270	71
<b>Union of Soviet Socialist Republics</b>		
Union of Soviet Socialist Republics.....	8,649,539	227,687

<sup>1</sup> African population based on sample survey.<sup>2</sup> African population only.<sup>3</sup> Fewer than 500 persons.<sup>4</sup> Excluding Indian jungle population.<sup>5</sup> Excluding nomadic Indian tribes.<sup>6</sup> Excluding Indian and

Negro population living in tribes.

<sup>7</sup> Excluding Kashmir-Jammu, the final status of which has not yet been

determined.

<sup>8</sup> Including 487 sq. miles demilitarized zone.<sup>9</sup> Latest official estimate.<sup>10</sup> Less

than one square mile.

<sup>11</sup> Latest official estimate; inhabited only in winter season; Norwegian population only.

## CHAPTER IV.—IMMIGRATION AND CITIZENSHIP

### CONSPECTUS

	PAGE		PAGE
<b>Part I.—Immigration and Emigration</b> . . .	215	<b>Part II.—Canadian Citizenship</b> . . . . .	228
SECTION 1. IMMIGRATION POLICY AND ADMINISTRATION . . . . .	215	SECTION 1. THE CANADIAN CITIZENSHIP ACT	228
SECTION 2. IMMIGRATION STATISTICS . . . . .	217	SECTION 2. CANADIAN CITIZENSHIP STATISTICS . . . . .	230
SECTION 3. EMIGRATION STATISTICS . . . . .	227		

*The interpretation of the symbols used in the tables throughout the Year Book  
will be found on p. viii of this volume.*

### PART I.—IMMIGRATION AND EMIGRATION\*

#### Section 1.—Immigration Policy and Administration

**Policy.**—Traditionally, Canada has sought to increase its population through immigration in order to expand the domestic market, reduce per capita costs of administration, stimulate economic activity by providing new skills, ideas and enthusiasm, and support a higher level of cultural independence and creativity. Canadian experience indicates that a substantial volume of immigration is highly desirable.

New population cannot be added haphazardly without regard to their means of subsistence or their effect on Canadian life. Technological change and the development of Canadian society to its present complex state require that to be able to establish themselves successfully new settlers must be economically competitive in terms of education, training, skills and personal qualities. Over the years, Canada has endeavoured to acquire immigrants who were adaptable to Canadian life. Such persons, finding familiar institutions in Canada, feel more at home and this assists in their establishment in the new life they find here. Canada makes every effort to sustain the movement of immigrants from countries having like economic, social and political backgrounds. On the other hand, qualified people from other countries can integrate successfully into Canadian society and the existing immigration Regulations recognize this principle. People anywhere in the world have an opportunity to immigrate to Canada if they demonstrate their suitability for life in this country and are likely to become established without hardship to themselves or disruption to the communities in which they settle.

The core of Canada's immigration policy† is contained in the Regulations introduced with effect from Feb. 1, 1962. Those persons who are eligible to apply for permanent admission to Canada are specified. They include anyone, regardless of origin, citizenship, country of residence or religious belief, who is personally qualified by reason of education, training, skills or other special qualifications to become satisfactorily established in Canada. In practice, the personal qualifications and attributes of the applicant for admission are related to the needs and interests of Canadian society in any of its diversities—economic, social or cultural.

\* Sections 1 and 2 of this Part were revised under the direction of the Deputy Minister, Department of Manpower and Immigration, Ottawa. The history of immigration and the Immigration Act and Regulations up to the mid-1950s is dealt with in detail in a special article entitled "Developments in Canadian Immigration" appearing in the 1957-58 Year Book at pp. 154-176. Supplementing that material is an article on the "Integration of Postwar Immigrants" at pp. 176-178 of the 1959 edition.

† At the time of writing (October 1966).

Other provisions of the present Regulations enable the families of persons approved for admission under these terms to accompany them. When in Canada, a permanent resident may bring his spouse and dependent children as well as certain other close relatives to Canada. Except in some circumstances, at the time of writing, no special criteria apply in the case of these immigrants. All must be in good health and of good character and be in possession of such documentation as the Regulations prescribe. Sponsors must be able to provide adequate care and maintenance for those for whom they apply. A revision of these Regulations is proposed in the White Paper on Immigration mentioned below.

In addition, Canada has on many occasions since the end of World War II sanctioned the entry of thousands of refugees. This is a humanitarian movement and is tangible evidence of Canada's recognition of its responsibilities in the international community. A conservative estimate of the number of refugees admitted since 1945 is 300,000.

**Administration.**—The Canada Immigration Division of the Department of Manpower and Immigration administers the Immigration Act and Regulations. The White Paper on Immigration which the Prime Minister, in December 1964, announced would be prepared for presentation to Parliament was tabled in the House of Commons on Oct. 14, 1966. It provides a statement on the Federal Government's views on immigration policies and procedures in relation to national problems and national interests. It is expected that discussion of the White Paper, both in Parliament and by the public, will give rise to a consensus on the nature of changes required in immigration policy, procedures and legislation.

During 1964 and 1965, the Immigration Division was reorganized along functional lines to make its operation more consistent with its primary objective, which is to attract to Canada as many skilled persons as the economy can absorb, and to equip it to meet the challenges of the years ahead and thus give better service to immigrants and to the Canadian public. The reorganization involved more decentralization of authority, the stepping up of promotional activities overseas, the opening of new offices and the recruitment of new, highly qualified staff.

In January 1966, the Federal Government announced the proposed conversion of the Department of Citizenship and Immigration into a new Department of Manpower and Immigration. The establishment of the new Department became effective on Oct. 1, 1966 following proclamation but, at the time of writing, some administrative arrangements remained to be resolved and the planned new organizational structure for the Immigration Division must be regarded as tentative only, even though part of it became effective on Aug. 1, 1966. Under the plan, the Immigration Division will have three main Branches: (1) the *Planning Branch*, responsible for the development of the immigration program, for the evaluation and co-ordination of the factors affecting the program, and for the analysis of the results achieved; (2) the *Foreign Branch*, responsible for the selection of immigrants and for most other activities of the Division outside of Canada; and (3) the *Home Branch*, responsible for the admission and reception of, and assistance to, immigrants on their arrival in Canada, the enforcement of the Immigration Act and Regulations and the counselling of exceptional problem cases. A former, important part of the activities of the Immigration Division was the placement and settlement of immigrants in employment in Canada. This activity, along with the immigration officers who were trained specialists in the work, is being transferred to the Canada Manpower Division of the Department.

In June 1964, Mr. Joseph Sedgwick, Q.C., was asked by the Federal Government to inquire into allegations made in the House of Commons and elsewhere that certain aliens had been unlawfully detained and deprived of access to counsel and also to inquire into the general procedures being followed in relation to the arrest, deportation and prosecution of persons illegally in Canada. In April 1965, Mr. Sedgwick presented Part I of his report, dealing only with the allegations concerning detainees. In effect, the report upheld the actions of the Immigration Division in that Mr. Sedgwick found that the allegations were



ill-founded or exaggerated and that the proceedings leading to the making of orders for deportation in a majority of cases were above reproach. In a very few cases he criticized administrative delays but expressed the opinion that the fault did not arise from any intention to act in an improper manner. In February 1965, Mr. Sedgwick's terms of reference were expanded to include an examination of the extent and use of the discretionary powers which immigration legislation confers on the Minister in charge of immigration, and also an investigation of the basis and operation of the Immigration Appeal Board. The second part of Mr. Sedgwick's report was tabled in the House of Commons on Mar. 17, 1966, and the recommendations it contained were placed under study. On Oct. 20, 1966 it was agreed to establish a Special Joint Committee of the Senate and the House of Commons to examine and report upon the White Paper and Mr. Sedgwick's two reports.

On July 6, 1966, the Minister introduced a Bill in the House of Commons "to make provision for appeals to an Immigration Appeal Board in respect of certain matters relating to immigration". It is expected that the Bill will be debated by Parliament before the end of 1966.

The Minister, on July 8, 1966, announced to Parliament a new policy concerning persons who come to Canada as visitors and then attempt to remain as immigrants, thus circumventing the normal immigration channels. He set out clear and distinct criteria under which such persons already in Canada will be allowed to remain here, and separate and more exacting criteria for future visitors attempting to remain here without undergoing immigrant selection and examination procedures abroad.

At the same time the Minister announced the Government's intention to introduce changes in the immigration Regulations governing the admission of persons sponsored by relatives in Canada. The changes are to provide uniform standards for admission regardless of the immigrant's citizenship or country of residence. The changed sponsorship provisions will be made universally effective by the removal of certain security limitations on the admission of relatives from Eastern Europe and from other countries where such limitations now exist. The proposed changes are detailed in the White Paper on Immigration.

In March 1966, three amendments were made to the immigration Regulations. Two were for the purpose of eliminating delays and inconvenience caused by documentation procedures involving transportation companies. The third removed the need for permanent legal residents of the United States, who are not United States citizens, to obtain a passport from their country of citizenship in order to be admitted to Canada.

There are 33 visa offices located abroad at: London, Liverpool, Leeds, Bristol, Glasgow, Belfast, Dublin, Paris, Bordeaux, Marseille, Brussels, Berne, The Hague, Copenhagen, Cologne, Berlin, Hamburg, Munich, Stuttgart, Vienna, Oslo, Stockholm, Helsinki, Lisbon, Madrid, Rome, Milan, Athens, Cairo, Tel Aviv, New Delhi, Tokyo and Hong Kong. The Regional Immigration Headquarters for Continental Europe in Geneva is an administrative centre which does not issue visas. Four offices in the United States—at New York, Chicago, San Francisco and Denver—furnish information and counselling but do not issue visas. The possibility of opening visa offices in Birmingham and Manila is being investigated and a study has been begun to determine the feasibility of a new office in the Middle East area. Personnel at all posts are kept in close touch with economic conditions in Canada and thus are able to advise immigrants regarding their prospects for successful establishment. Examination of immigrants and visitors is carried out at 552 ports of entry on the Canadian coasts, at points along the International Boundary, at certain airports and at certain inland offices.

## Section 2.—Immigration Statistics

Table 1 shows the number of immigrants arriving in Canada in each year since 1913, the peak year of immigration into the country. Table 2 shows the number and distribution of immigrants in the population of Canada on the latest decennial census date, June 1, 1961, by period of arrival.

## 1.—Immigrant Arrivals, 1913-65

NOTE.—Figures for 1852-93 are given in the 1942 Year Book, p. 153, and for 1894-1912 in the 1948-49 edition, p. 175.

Year	Arrivals	Year	Arrivals	Year	Arrivals	Year	Arrivals	Year	Arrivals
	No.		No.		No.		No.		No.
1913.....	400,870	1924.....	124,164	1935.....	11,277	1946.....	71,719	1957.....	282,164
1914.....	150,484	1925.....	84,907	1936.....	11,643	1947.....	64,127	1958.....	124,851
1915.....	36,665	1926.....	135,982	1937.....	15,101	1948.....	125,414	1959.....	106,928
1916.....	55,914	1927.....	158,886	1938.....	17,244	1949.....	95,217	1960.....	104,111
1917.....	72,910	1928.....	166,783	1939.....	16,994	1950.....	73,912	1961.....	71,689
1918.....	41,845	1929.....	164,993	1940.....	11,324	1951.....	194,391	1962.....	74,586
1919.....	107,698	1930.....	104,806	1941.....	9,329	1952.....	164,498	1963.....	93,151
1920.....	138,824	1931.....	27,530	1942.....	7,576	1953.....	168,868	1964.....	112,606
1921.....	91,728	1932.....	20,591	1943.....	8,504	1954.....	154,227	1965.....	146,758
1922.....	64,224	1933.....	14,382	1944.....	12,801	1955.....	109,946		
1923.....	133,729	1934.....	12,476	1945.....	22,722	1956.....	164,857		

Table 2 shows that, according to census figures, 1,507,116 persons reported that they had come to Canada between Jan. 1, 1946 and June 1, 1961. These immigrants constituted about 75 p.c. of the total number of immigrants who arrived in Canada during that period. According to the records of the Department of Manpower and Immigration, 2,033,598 persons entered Canada as immigrants during the period 1946-61. The difference between this total and the 1,507,116 postwar immigrants reported in the 1961 Census, amounting to 526,482 persons, represents the losses due to death and emigration among the postwar immigrant arrivals up to June 1961. Since this difference is arrived at by comparing statistics derived from two different sources, it must be taken as only an approximate measure of these losses. It is estimated that deaths of immigrants arriving since 1946 would not exceed 86,000 by June 1961. Hence it would appear that roughly 440,000 emigrated in the period between January 1946 and June 1961, or slightly more than one fifth of the total arrivals over this period.

The 440,000 postwar immigrants who appear to have emigrated from Canada up to June 1961 would thus constitute a little over half the total estimated emigration from Canada since 1946, according to data on emigration used in the preparation of annual population estimates. In this connection it might be mentioned that a substantial element in total Canadian emigration is the movement of Canadian-born persons to the United States, some 387,000 entering the United States as immigrants between July 1946 and July 1961 according to the United States Immigration Service records (see p. 227).

## 2.—Immigrant Population, by Period of Immigration and by Province, Census 1961

Province or Territory	Before 1930	1931-40	1941-45	1946-50	1951-55	1956-61 <sup>1</sup>	1946-61 <sup>1</sup>	Total
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	1,356	339	338	1,317	1,230	1,689	4,236	6,269
Prince Edward Island.....	1,170	217	117	439	452	597	1,488	2,992
Nova Scotia.....	14,752	2,165	1,079	4,434	5,281	6,457	16,172	34,168
New Brunswick.....	10,496	1,451	886	3,184	2,887	4,379	10,450	23,283
Quebec.....	121,164	14,202	5,321	38,452	87,873	121,437	247,762	388,449
Ontario.....	462,705	41,959	15,190	169,044	323,528	340,731	833,303	1,353,157
Manitoba.....	101,758	4,259	1,483	15,925	21,134	25,439	62,498	169,998
Saskatchewan.....	116,192	3,170	1,034	8,124	9,497	11,372	28,993	149,389
Alberta.....	156,324	8,446	2,420	25,326	48,263	47,970	121,559	288,749
British Columbia.....	229,790	11,300	4,498	37,296	65,947	74,301	177,544	423,132
Yukon Territory.....	867	81	42	265	626	833	1,724	2,714
Northwest Territories.....	425	114	37	178	472	737	1,387	1,963
<b>Canada.....</b>	<b>1,216,999</b>	<b>87,703</b>	<b>32,445</b>	<b>303,984</b>	<b>567,190</b>	<b>635,942</b>	<b>1,507,116</b>	<b>2,844,263</b>

<sup>1</sup> Up to the date of the Census, June 1, 1961.

**Recent Immigration.**—The extent of immigration to Canada in any period is affected both by domestic conditions and by conditions abroad. However, these influences

are seldom immediately decisive. News of good economic conditions in Canada predisposes people in favour of this country but, because the immigration process usually takes several months, actual immigration is not always fully coincidental with the economic situation, so that immigration may at times be slight in good years but appear unduly heavy in less buoyant periods. The time-lag caused by selection, medical examination and documentation is unavoidable. Transportation is often another delaying factor and to these considerations must be added the effect of seasonal unemployment in Canada, which tends to discourage immigration during the months from November to April.

In comparison with the relatively high levels of immigration in the three years immediately following the outbreak of the Korean War in 1951, immigration dropped off slightly from 168,868 in 1953 to 154,227 in 1954. In 1954 a minor setback occurred in the Canadian economy and this resulted in a very sharp decline of some 44,000 in the 1955 immigrant intake. However, with the return of better times in North America and the deterioration of the political situation in Europe, immigration rose by 55,000 in 1956. The Hungarian revolution and the Suez crisis of 1956 had a sharp impact on Canadian immigration in 1957 when 282,164 persons were admitted, including 31,643 from Hungary and 108,989 from the British Isles. This was the largest number of immigrants to enter Canada since 1913.

The conclusion of the Suez affair and the suppression of the Hungarian revolt restored some measure of calm in Europe. Canada's economy suffered a recession in 1956 and 1957 while Europe's economic position improved, as a result of which only 124,851 immigrants came to Canada in 1958. Britain's recovery from the War and its aftermath was reflected in the fact that, for the first time in the postwar years, the British Isles group of arrivals was not the largest—persons from Italy were in first place, numbering 27,043 compared with 24,777 from the British Isles. Total arrivals dropped from 106,928 in 1959 to 104,111 in 1960 and to 71,689 in 1961 and during these years the numbers from Italy remained in first place. The main contributing factors to the decline in number of immigrant arrivals after 1958 were: (1) the upsurge in the economies of those European countries from which Canada has received the majority of its immigrants and (2) the increasing emphasis placed on selecting the immigrant who has sufficient funds and the necessary knowledge to establish himself in a business or industry of his own, as well as on the immigrant with special skills or qualifications which would permit his ready integration into the Canadian labour force.

The upward trend since 1962, when immigrants from the British Isles again headed all groups, reflects an intensification of promotional and recruitment activities in the main source countries and an expansion of immigration facilities in other areas of the world which previously have contributed few immigrants to Canada. During 1965, immigrants totalled 146,758, 30.3 p.c. more than in the previous year. There was an increase from almost every country but the major source countries were, in order: Britain, Italy, United States, Germany, France and Portugal. Immigration from the United States increased 20.5 p.c. over 1964 and was the highest in any one year since the end of the Second World War.

Ontario and Quebec continued to receive the major share of the immigrants; Ontario received 54.3 p.c., Quebec 20.7 p.c., British Columbia 12.6 p.c., the three Prairie Provinces 10.0 p.c. and the Atlantic Provinces 2.4 p.c. The total movement was divided almost equally between labour force entrants and non-workers; 74,195 were classed as workers and 72,563 as dependants or non-workers. It is also significant that of the immigrants who entered the labour force, 67 p.c. were in the 'more skilled' categories, compared with 59 p.c. in these categories in 1964.

**Analyses of Immigration in 1963-65.**—Analyses of the content of the immigration movement during the years 1963, 1964 and 1965 are given in Tables 3 to 10, and the numbers of persons deported from Canada for various reasons for the same years in Table 11.

Table 3 classifies immigrant admissions by country of last permanent residence. During the three-year period shown, 27.2 p.c. of the immigration flow came from Britain and the Republic of Ireland, 45.5 p.c. from Continental Europe, 11.2 p.c. from the United States and 16.1 p.c. from all other countries.



### 3.—Immigrant Arrivals by Country of Last Permanent Residence, 1963-65

NOTE.—Comparable figures from 1946 are given in the corresponding table of previous Year Books beginning with the 1951 edition; figures in less detail for 1939-45 appear in the 1950 edition, p. 186.

Country	1963	1964	1965	Country	1963	1964	1965
No.	No.	No.	No.	No.	No.	No.	No.
<b>Commonwealth—</b>				<b>Europe—concluded</b>			
British Isles—				Germany.....	6,744	5,992	8,927
England.....	16,562	20,481	28,820	Greece.....	4,759	4,391	5,642
Northern Ireland.....	1,743	1,847	1,934	Hungary.....	555	424	453
Scotland.....	6,074	6,698	8,363	Italy.....	14,427	19,297	26,398
Wales.....	201	233	682	Netherlands.....	1,728	2,029	2,619
Lesser Isles.....	23	17	58	Poland.....	1,482	1,944	1,975
Totals, British Isles....	24,603	29,279	39,857	Portugal.....	4,400	5,309	5,734
Australia.....	1,376	1,855	2,150	Scandinavian Countries—			
Hong Kong.....	1,008	2,490	4,155	Denmark.....	573	717	859
India.....	737	1,154	2,241	Other.....	568	604	692
Malta.....	869	1,162	1,055	Spain.....	436	674	837
New Zealand.....	316	448	561	Switzerland.....	999	1,446	2,169
West Indies.....	2,227	2,072	2,926	Yugoslavia.....	781	1,187	1,230
Other Commonwealth.....	1,289	1,866	2,134	Other.....	227	275	330
Totals, Commonwealth.	32,425	40,326	55,079	<b>North America—<sup>1</sup></b>			
Republic of Ireland.....	590	680	861	Mexico.....	117	136	147
Africa <sup>1</sup> .....	688 <sup>2</sup>	1,598 <sup>3</sup>	1,613 <sup>4</sup>	United States.....	11,733	12,565	15,143
Asia <sup>1</sup> .....	629	760	2,157	Other.....	176	174	221
<b>Europe—<sup>1</sup></b>				<b>South America<sup>1</sup>.....</b>	1,103	1,643	1,862
Austria.....	799	1,099	1,472	<b>Middle East—<sup>1</sup></b>			
Belgium.....	935	989	977	Egypt.....	1,476	1,855	1,378
Finland.....	251	353	504	Israel.....	688	871	822
France.....	5,569	4,542	5,225	Lebanon.....	456	347	602
				Other.....	225	379	825
				<b>Other Countries.....</b>	9	—	5
				<b>Totals, All Countries....</b>	<b>93,151</b>	<b>112,606</b>	<b>146,758</b>

<sup>1</sup> Excludes Commonwealth countries.  
417 from the Republic of South Africa.

<sup>2</sup> Includes 296 from the Republic of South Africa.  
<sup>4</sup> Includes 545 from the Republic of South Africa.

<sup>3</sup> Includes

Of the immigrant arrivals in 1965, 36.1 p.c. were born in Commonwealth countries or in the Republic of Ireland compared with 35.6 p.c. in 1964 and 35.2 p.c. in 1963; 23.2 p.c. were born in Italy or Greece, 8.6 p.c. in Germany, France or the Netherlands, 8.2 p.c. in the United States, 5.4 p.c. in Spain or Portugal and 3.9 p.c. in Poland or Yugoslavia.

### 4.—Birthplaces of Immigrant Arrivals, 1963-65

NOTE.—Figures from 1942 are given in the corresponding table of previous Year Books beginning with the 1948-49 edition.

Birthplace	1963	1964	1965	Birthplace	1963	1964	1965
No.	No.	No.	No.	No.	No.	No.	No.
<b>Commonwealth—</b>				<b>Commonwealth—concluded</b>			
British Isles—				Other Commonwealth.....	1,668	3,303	3,399
England.....	14,268	17,383	24,233	<b>Totals, Commonwealth.</b>	<b>31,894</b>	<b>39,096</b>	<b>51,514</b>
Northern Ireland.....	1,851	1,993	2,143	<b>Republic of Ireland.....</b>	905	1,048	1,443
Scotland.....	6,340	7,145	8,838	<b>Africa<sup>1</sup>.....</b>	1,303	1,608	1,442
Wales.....	551	750	1,127	<b>Asia—<sup>1</sup></b>			
Lesser Isles.....	26	48	64	China.....	971	2,168	4,552
Totals, British Isles....	23,036	27,319	36,405	Japan.....	184	151	221
Australia.....	1,256	1,656	2,039	Other.....	585	647	2,052
Canada.....	906	958	1,043	<b>Europe—<sup>1</sup></b>			
India.....	1,146	1,642	3,040	Austria.....	565	680	803
Malta.....	907	1,184	1,124	Belgium.....	603	719	696
New Zealand.....	399	456	620	Czechoslovakia.....	234	268	385
West Indies.....	2,576	2,578	3,844				

<sup>1</sup> Excludes Commonwealth countries.

## 4.—Birthplaces of Immigrant Arrivals, 1963-65—concluded

Birthplace	1963	1964	1965	Birthplace	1963	1964	1965
No.	No.	No.	No.	No.	No.	No.	No.
<b>Europe—concluded</b>				<b>Middle East—<sup>1</sup></b>			
Denmark.....	610	723	873	Egypt.....	1,583	1,946	1,653
Finland.....	287	408	584	Israel.....	308	439	490
France.....	2,452	3,143	3,396	Lebanon.....	367	299	492
Germany.....	4,518	4,771	6,964	Turkey.....	587	619	915
Greece.....	5,188	4,631	5,972	Other.....	124	153	561
Hungary.....	952	973	1,144				
Italy.....	15,474	20,578	28,118	<b>North America—<sup>1</sup></b>			
Netherlands.....	1,696	1,893	2,327	Mexico.....	105	127	147
Norway.....	290	282	324	United States.....	8,762	9,810	12,017
Poland.....	2,004	2,371	2,477	Other.....	240	240	279
Portugal.....	4,255	5,700	6,505				
Romania.....	838	425	424	<b>South America<sup>1</sup></b>	515	736	977
Spain.....	1,053	1,147	1,419				
Switzerland.....	612	795	1,231	<b>Other</b>	96	9	11
Union of Soviet Socialist Republics <sup>2</sup> .....	416	413	543				
Yugoslavia.....	2,534	3,116	3,259				
Other.....	491	474	548	<b>Grand Totals</b>	<b>93,151</b>	<b>112,606</b>	<b>146,758</b>

<sup>1</sup> Excludes Commonwealth countries.<sup>2</sup> In both Europe and Asia.

Immigrants of Continental European origin comprised 54.9 p.c. of the influx during 1965 and those of British origin made up 32.2 p.c. Proportions of Continental Europeans in 1964 and 1963 were 57.6 p.c. and 57.4 p.c., respectively, and of British origin 32.1 p.c. and 33.4 p.c. in the same years.

## 5.—Origins of Immigrant Arrivals, 1963-65

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1939 edition.

Origin	1963	1964	1965	Origin	1963	1964	1965
No.	No.	No.	No.	No.	No.	No.	No.
<b>British—</b>				<b>Continental European—concluded</b>			
English.....	17,868	21,336	28,810	Scandinavian—			
Irish.....	4,767	5,229	6,237	Danish.....	743	852	1,057
Scottish.....	7,734	8,637	10,692	Icelandic.....	18	17	9
Welsh.....	731	997	1,482	Norwegian.....	502	480	649
<b>Totals, British</b>	<b>31,100</b>	<b>36,199</b>	<b>47,221</b>	Swedish.....	395	452	545
<b>Continental European—</b>				Spanish <sup>1</sup> .....	1,468	1,642	1,909
Albanian.....	51	29	31	Swiss <sup>2</sup> .....	661	833	1,194
Austrian.....	588	751	819	Ukrainian.....	215	202	283
Belgian.....	539	723	675	Yugoslavic <sup>1</sup> .....	2,449	3,116	3,220
Bulgarian.....	23	35	75				
Czech and Slovak.....	160	237	306	<b>Totals, Continental European</b>	<b>53,477</b>	<b>64,836</b>	<b>80,643</b>
Estonian.....	69	57	65				
Finnish.....	325	476	656	<b>Other—</b>			
French.....	3,291	4,044	4,408	Arabian.....	154	214	263
German.....	6,550	7,091	9,832	Armenian.....	932	855	887
Greek.....	5,647	5,200	6,730	Chinese.....	1,571	3,210	5,234
Hungarian.....	995	1,054	1,323	East Indian.....	1,386	2,077	3,491
Italian.....	16,194	21,508	29,360	Indian (American).....	21	28	32
Jewish.....	2,180	3,113	2,816	Japanese.....	199	163	219
Latvian.....	92	67	97	Lebanese.....	591	635	763
Lithuanian.....	73	84	95	Mexican.....	24	27	55
Luxembourg.....	21	13	11	Negro.....	2,453	2,627	4,065
Maltese.....	906	1,200	1,133	Syrian.....	108	178	241
Netherlander.....	2,181	2,464	2,999	Turkish.....	310	341	527
Polish.....	2,069	2,621	2,862	Unspecified.....	825	1,216	3,117
Portuguese.....	4,732	6,109	7,069				
Romanian.....	163	165	155	<b>Totals, Other</b>	<b>8,574</b>	<b>11,571</b>	<b>18,894</b>
Russian.....	177	201	260	<b>Grand Totals</b>	<b>93,151</b>	<b>112,606</b>	<b>146,758</b>

<sup>1</sup> Includes a few minor groups, such as German, French, Italian, etc.<sup>2</sup> Reported as Swiss origin but evidently one of the constituent races

Out of every 100 immigrants admitted to Canada during the three-year period 1963-65, 29 were British subjects, 18 were citizens of Italy, 10 of the United States, five of Germany, five of Greece, and five of Portugal; many other nationalities made up the remaining 28.

### 6.—Citizenship of Immigrant Arrivals, 1963-65

NOTE.—Figures from 1930 are given in the corresponding table of previous Year Books beginning with the 1936 edition.

Country of Citizenship	1963	1964	1965	Country of Citizenship	1963	1964	1965
	No.	No.	No.		No.	No.	No.
Australia.....	1,440	1,896	2,322	Netherlands.....	1,773	1,989	2,525
Austria.....	529	658	770	New Zealand.....	377	457	642
Belgium.....	528	675	645	Norway.....	285	268	317
Britain and colonies.....	28,981	32,773	42,785	Pakistan.....	137	307	470
Central America.....	27	21	25	Poland.....	1,539	1,995	2,027
Ceylon.....	25	78	141	Portugal.....	4,281	5,721	6,583
China.....	911	2,127	3,375	South Africa.....	339	455	581
Czechoslovakia.....	25	92	80	South America.....	594	732	928
Denmark.....	593	716	874	Southern Rhodesia.....	120	93	56
Egypt.....	1,187	1,532	1,270	Spain.....	1,043	1,123	1,414
Finland.....	281	401	558	Sweden.....	183	217	240
France.....	2,772	3,417	3,691	Switzerland.....	603	760	1,144
Germany.....	4,740	4,866	7,031	Turkey.....	327	395	662
Greece.....	5,385	4,819	6,181	Union of Soviet Socialist Republics.....	75	80	159
Hungary.....	551	460	592	United States.....	10,313	11,350	13,857
India.....	860	1,309	2,386	Yugoslavia.....	978	1,519	1,886
Ireland, Republic of.....	759	908	1,311	Other African.....	46	134	90
Israel.....	746	929	837	Other Asian.....	253	622	2,441
Italy.....	15,589	20,720	28,397	Other European.....	64	76	712
Japan.....	171	140	188	Stateless.....	2,394	2,661	2,526
Lebanon.....	488	385	637	Other.....	431	1,624	2,486
Luxembourg.....	21	12	11				
Mexico.....	100	114	130				
Morocco.....	287	980	775				
				<b>Totals.....</b>	<b>93,151</b>	<b>112,606</b>	<b>146,758</b>

Sex distribution of recent immigrant arrivals is shown in Table 7. In the three years 1963-65, adult males comprised 35.5 p.c. of the immigrants, adult females 36.5 p.c. and children under 18 years of age the remaining 28.0 p.c. Without relation to age, 50.2 p.c. of the newcomers were females.

### 7.—Sex Distribution of Immigrants as Adult Males, Adult Females and Children, 1963-65

NOTE.—Figures from 1930 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Item	1963	1964	1965
	No.	No.	No.
Males.....	45,163	55,825	74,707
Under 18 years.....	12,418	16,321	21,761
Adult.....	32,745	39,504	52,946
Females.....	47,988	56,781	72,051
Under 18 years.....	12,094	15,344	20,561
Adult.....	35,894	41,437	51,490
<b>Totals, Immigrants.....</b>	<b>93,151</b>	<b>112,606</b>	<b>146,758</b>

The number of female immigrants coming into Canada was higher than the number of male immigrants in every year from 1957 to 1964. In 1965, however, the excess of males was 2,656, although in the age groups 15-19, 20-24 and over 50 years the number of females exceeded that of males. In the single category, males exceeded females in all age groups up to 40 years but in the married category females exceeded males by 2,409, in the widowed category by 2,794 and in the divorced or separated category by 534. Of all persons arriving in 1965 who were 15 years of age or over, 54.5 p.c. were married, 40.2 p.c. were single and 5.3 p.c. were widowed, divorced or separated.



## 8.—Marital Status of Immigrant Arrivals, by Sex and Age Group, 1965

Sex and Age Group	Single	Married	Widowed	Divorced	Separated	Total
	No.	No.	No.	No.	No.	No.
<b>Males—</b>						
0-14 years.....	18,977	—	—	—	—	18,977
15-19 “.....	5,813	76	—	—	—	5,889
20-24 “.....	9,738	2,614	3	12	10	12,377
25-29 “.....	6,689	6,561	7	85	33	13,375
30-39 “.....	2,926	11,025	24	194	72	14,241
40-49 “.....	379	4,732	28	97	48	5,284
50-59 “.....	90	2,223	101	33	12	2,464
60 years or over.....	65	1,522	440	45	28	2,100
<b>Totals, Males.....</b>	<b>44,677</b>	<b>28,753</b>	<b>603</b>	<b>471</b>	<b>203</b>	<b>74,707</b>
<b>Females—</b>						
0-14 years.....	17,845	3	—	—	—	17,848
15-19 “.....	4,665	1,482	—	3	2	6,152
20-24 “.....	6,838	6,554	11	39	24	13,466
25-29 “.....	3,967	7,164	22	95	38	11,286
30-39 “.....	2,116	9,075	82	235	77	11,585
40-49 “.....	457	3,668	277	213	75	4,690
50-59 “.....	194	2,004	934	157	75	3,364
60 years or over.....	202	1,212	2,071	104	71	3,660
<b>Totals, Females.....</b>	<b>36,284</b>	<b>31,162</b>	<b>3,397</b>	<b>846</b>	<b>362</b>	<b>72,051</b>

**Destinations and Occupations.**—Upon arrival in Canada, immigrants are asked to state their intended destinations. According to these records, Ontario absorbed by far the highest proportion of arrivals in the three-year period 1963-65—53.6 p.c. of all the males and 54.4 p.c. of all the females. Quebec was the second province of destination, receiving 23.4 p.c. of the males and 21.8 p.c. of the females, followed by British Columbia with 11.0 p.c. of the males and 11.7 p.c. of the females. The proportions intending to settle in the Prairie Provinces were 9.5 p.c. and 9.7 p.c., respectively, and in the Atlantic Provinces 2.4 p.c. and 2.3 p.c., respectively. The provincial distribution has changed little from year to year throughout the whole postwar period.

## 9.—Intended Province of Destination of Male and Female Immigrants Admitted to Canada, 1963-65

Province or Territory	1963			1964			1965		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	184	165	349	224	221	445	303	301	604
Prince Edward Island.....	33	45	78	33	46	79	63	74	137
Nova Scotia.....	604	594	1,198	601	588	1,189	867	745	1,612
New Brunswick.....	409	360	769	320	376	696	573	501	1,074
Quebec.....	11,759	11,505	23,264	13,400	12,573	25,973	15,942	14,404	30,346
Ontario.....	23,515	25,701	49,216	30,358	31,110	61,468	40,357	39,345	79,702
Manitoba.....	1,431	1,361	2,792	1,581	1,425	3,006	2,053	1,895	3,948
Saskatchewan.....	695	743	1,438	873	922	1,795	1,238	1,411	2,649
Alberta.....	2,253	2,478	4,731	2,594	2,927	5,521	3,975	4,074	8,049
British Columbia.....	4,251	5,003	9,254	5,790	6,534	12,324	9,269	9,233	18,502
Yukon and Northwest Territories.....	29	33	62	51	59	110	67	68	135
<b>Canada.....</b>	<b>45,163</b>	<b>47,988</b>	<b>93,151</b>	<b>55,825</b>	<b>56,781</b>	<b>112,606</b>	<b>74,707</b>	<b>72,051</b>	<b>146,758</b>

In like manner, immigrant arrivals are asked to record the occupations they intend to follow in Canada. Approximately 50.6 p.c. of the persons admitted in 1965 declared that they would enter the labour force. The other 49.4 p.c. were wives, children and other dependants or were retired persons. Of the male workers, 23.7 p.c. were classed as managerial, professional and technical, 5.8 p.c. were clerical workers, 5.0 p.c. were in service occupations, 41.3 p.c. were in manufacturing, mechanical and construction trades, 12.9 p.c.

were general labourers and 4.5 p.c. were farmers. About 22.0 p.c. of the female immigrants entering the labour force were intending to follow service occupations. Details are given in Table 10.

**10.—Intended Occupations of Male and Female Immigrants Admitted to Canada, 1964 and 1965**

Intended Occupation	1964			1965		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
<b>Workers</b>						
<b>Managerial (owners, managers, officials).....</b>	<b>1,159</b>	<b>53</b>	<b>1,212</b>	<b>1,649</b>	<b>79</b>	<b>1,728</b>
<b>Professional and Technical.....</b>	<b>7,325</b>	<b>4,640</b>	<b>11,965</b>	<b>10,527</b>	<b>6,127</b>	<b>16,654</b>
Professional Engineers—						
Civil.....	263	—	263	530	3	533
Mechanical.....	576	—	576	691	1	692
Industrial.....	38	1	39	79	1	80
Electrical.....	308	—	308	485	1	486
Mining.....	66	—	66	117	—	117
Chemical.....	164	—	164	238	4	242
Other.....	58	2	60	99	5	104
Physical Scientists—						
Chemists.....	276	29	305	370	48	418
Geologists.....	96	4	100	163	3	166
Physicists.....	52	4	56	101	7	108
Other.....	27	2	29	46	4	50
Biologists and Agricultural Professionals—						
Biological scientists.....	55	11	66	84	30	114
Veterinarians.....	32	—	32	23	—	23
Other.....	50	2	52	59	7	66
Teachers—						
Professors, principals.....	590	82	672	943	141	1,084
School teachers.....	708	1,135	1,843	976	1,432	2,408
Other instructors.....	19	20	39	46	85	131
Health Professionals—						
Physicians, surgeons.....	561	107	668	679	113	792
Dentists.....	53	2	55	51	9	60
Nurses, graduate.....	81	1,886	1,967	115	2,714	2,829
Nurses-in-training.....	—	—	—	8	27	35
Therapists.....	29	169	198	29	190	219
Optometrists.....	4	1	5	8	2	10
Osteopaths, chiropractors.....	7	6	13	11	3	14
Pharmacists.....	41	22	63	46	41	87
Medical and dental technicians.....	84	109	193	136	173	309
Other.....	86	363	449	28	106	134
Law Professionals.....	36	3	39	42	7	49
Religion Professionals.....	344	92	436	340	116	456
Artists, Writers and Musicians—						
Commercial artists.....	120	51	171	114	23	137
Art teachers.....	10	6	16	17	8	25
Authors, editors, journalists.....	127	27	154	178	55	233
Musicians, music teachers.....	51	13	64	70	26	96
Other Professionals—						
Architects.....	89	5	94	195	15	210
Draughtsmen.....	898	59	957	1,499	90	1,589
Surveyors.....	55	—	55	83	2	85
Actuaries, statisticians.....	27	4	31	31	8	39
Economists.....	52	5	57	74	7	81
Computer programmers.....	2	—	2	—	1	1
Accountants, auditors.....	294	17	311	366	46	412
Dietitians.....	1	34	35	—	44	44
Social workers.....	18	54	72	49	107	156
Librarians.....	18	39	57	28	73	101
Interior decorators.....	36	11	47	76	32	108
Photographers.....	80	13	93	109	17	126
Science technicians.....	515	159	674	830	214	1,044
Miscellaneous.....	228	91	319	265	86	351

**10.—Intended Occupations of Male and Female Immigrants Admitted to Canada,  
1964 and 1965—continued**

Intended Occupation	1964			1965		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
<b>Workers—continued</b>						
<b>Clerical</b> .....	<b>2,522</b>	<b>5,409</b>	<b>7,931</b>	<b>2,989</b>	<b>6,930</b>	<b>9,919</b>
Bookkeepers, cashiers.....	459	569	1,028	542	803	1,345
Storekeepers, shipping clerks.....	169	15	184	350	53	403
Stenographers, typists.....	74	3,466	3,540	70	4,343	4,413
Other.....	1,820	1,359	3,179	2,027	1,731	3,758
<b>Transportation</b> .....	<b>547</b>	<b>2</b>	<b>549</b>	<b>931</b>	<b>5</b>	<b>936</b>
Aircraft operators.....	18	—	18	36	—	36
Railway operators.....	12	—	12	13	1	14
Water transport.....	121	1	122	227	1	228
Road transport.....	379	1	380	625	3	628
Other.....	17	—	17	30	—	30
<b>Communication</b> .....	<b>102</b>	<b>117</b>	<b>219</b>	<b>109</b>	<b>158</b>	<b>267</b>
<b>Commercial</b> .....	<b>1,276</b>	<b>640</b>	<b>1,916</b>	<b>1,624</b>	<b>861</b>	<b>2,485</b>
Auctioneers, canvassers.....	7	1	8	9	—	9
Pedlars, commercial travellers.....	54	2	56	113	3	116
Sales clerks, salesmen.....	1,178	629	1,807	1,478	840	2,318
Other.....	37	8	45	24	18	42
<b>Financial</b> .....	<b>80</b>	<b>3</b>	<b>83</b>	<b>165</b>	<b>10</b>	<b>175</b>
<b>Service and Recreation</b> .....	<b>2,108</b>	<b>4,312</b>	<b>6,420</b>	<b>2,575</b>	<b>5,012</b>	<b>7,587</b>
Protective service.....	130	4	134	166	6	172
Cooks.....	456	99	555	611	128	739
Domestic servants.....	60	2,754	2,814	51	3,043	3,094
Nurses' aides.....	—	29	29	33	292	325
Waiters, porters.....	641	822	1,463	812	756	1,568
Athletes, entertainers.....	80	34	114	102	44	146
Other.....	741	570	1,311	800	743	1,543
<b>Farmers</b> .....	<b>2,197</b>	<b>37</b>	<b>2,234</b>	<b>2,291</b>	<b>71</b>	<b>2,362</b>
<b>Loggers and Related Workers</b> .....	<b>61</b>	<b>—</b>	<b>61</b>	<b>153</b>	<b>1</b>	<b>154</b>
<b>Fishermen, Hunters, Trappers</b> .....	<b>12</b>	<b>—</b>	<b>12</b>	<b>33</b>	<b>—</b>	<b>33</b>
<b>Miners, Well Drillers</b> .....	<b>114</b>	<b>—</b>	<b>114</b>	<b>230</b>	<b>—</b>	<b>230</b>
<b>Construction</b> .....	<b>4,792</b>	<b>7</b>	<b>4,799</b>	<b>6,599</b>	<b>2</b>	<b>6,601</b>
Carpenters.....	1,336	—	1,336	1,728	1	1,729
Plumbers.....	348	—	348	505	—	505
Electricians.....	747	—	747	1,030	—	1,030
Painters, glaziers.....	699	6	705	736	—	736
Bricklayers, stonemasons.....	1,176	—	1,176	1,829	—	1,829
Cement and concrete workers.....	59	1	60	99	—	99
Plasterers, lathers.....	98	—	98	136	—	136
Sheet metal workers.....	230	—	230	370	1	371
Other (excl. labourers).....	99	—	99	166	—	166
<b>Manufacturing and Mechanical</b> .....	<b>10,358</b>	<b>2,319</b>	<b>12,677</b>	<b>14,635</b>	<b>2,931</b>	<b>17,566</b>
Food workers.....	940	19	959	1,133	37	1,170
Rubber workers.....	26	—	26	42	—	42
Leather workers.....	283	11	294	332	23	355
Textile workers.....	194	91	285	222	152	374
Tailors, furriers.....	756	1,745	2,501	888	2,231	3,119
Woodworkers, sawyers.....	569	4	573	977	1	978
Pulp and paper workers.....	88	9	77	64	7	71
Printers, bookbinders.....	315	31	346	455	50	505
Furnacemen, moulders.....	223	—	223	372	—	372
Jewellers, watchmakers.....	161	12	173	175	4	179
Machinists.....	3,538	45	3,583	5,036	36	5,072
Mechanics, repairmen.....	1,860	6	1,866	2,629	2	2,631
Electrical, electronic workers.....	746	20	766	1,115	42	1,157
Painters (excl. construction).....	63	—	63	251	1	255
Clay, glass, stone workers.....	177	12	189	204	13	217
Stationary enginemen.....	214	—	214	372	1	373
Freight handlers.....	14	—	14	56	—	56
Other.....	211	314	525	309	331	640



**10.—Intended Occupations of Male and Female Immigrants Admitted to Canada,  
1964 and 1965—concluded**

Intended Occupation	1964			1965		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
<b>Workers—concluded</b>						
<b>Labourers</b> .....	5,559	178	5,737	6,648	464	7,112
<b>Not Stated</b> .....	182	79	261	257	129	386
<b>Totals, Workers</b> .....	38,394	17,796	56,190	51,415	22,780	74,195
<b>Non-workers</b>						
<b>Wives</b> .....	—	21,023	21,023	—	25,809	25,809
<b>Children</b> .....	15,480	14,339	29,819	20,907	19,408	40,315
<b>Other</b> .....	1,951	3,623	5,574	2,385	4,054	6,439
<b>Totals, Non-workers</b> .....	17,431	38,985	56,416	23,292	49,271	72,563
<b>Totals, Immigrants</b> .....	55,825	56,781	112,606	74,707	72,051	146,758

**Deportations.**—Deportations by cause and nationality are shown in Table 11 for the years 1963-65. Persons who have not yet acquired domicile (five years of residence in Canada) may be deported if they fall into prohibited classes at time of entry or within five years of entry, if they have engaged in commercialized vice, have been convicted under the Criminal Code or have become inmates of prisons or mental institutions, or have gained entry by fraudulent means. The causes that may lead to deportation are narrowed after a person has acquired domicile. A person not a citizen may be deported regardless of length of residence if he is found to be a member of a subversive organization or engages in subversive activities, or if he has been convicted of an offence involving disloyalty to the Queen, or if he has, outside of Canada, engaged in activities detrimental to the security of Canada. A Canadian citizen cannot be deported.

**11.—Deportations,<sup>1</sup> by Cause and Nationality, 1963-65**

NOTE.—Figures from 1903 are given in the corresponding table of previous Year Books.

Cause and Nationality	1963	1964	1965
	No.	No.	No.
<b>Cause</b>			
Mental and physical .....	29	32	39
Public charges .....	7	6	6
Criminality .....	152	174 <sup>2</sup>	189
Misrepresentation <sup>2</sup> and stealth .....	251	347	502
Other causes .....	108	163 <sup>2</sup>	105
<b>Totals, Deportations</b> .....	547	722	841
<b>Nationality</b>			
British .....	64	76	80
United States .....	185	194	222
Other .....	298	452	539

<sup>1</sup> Excludes rejections and persons refused admission.

<sup>2</sup> Includes deserting seamen deported.

### Section 3.—Emigration Statistics

Emigration from Canada is an important factor tending to offset to some extent present and past immigration activities. The major outward movement has always, of course, been to the United States and that movement, both of native-born Canadians and of Europeans who originally migrated to Canada, has attained considerable proportions at certain periods. No Canadian statistics on emigration are available but Table 12 gives figures taken from the annual reports of the Immigration and Naturalization Service of the United States Department of Justice. These figures show the numbers of persons entering the United States from Canada during the years ended June 30, 1956-65 with the expressed intention of establishing permanent residence in that country. They do not include persons travelling for pleasure, even for extended periods of time, holders of border-crossing cards (normally issued to persons living in border areas of Canada but working in the United States) or casual tourist crossings in these same areas.

Of the 38,327 Canadian-born persons entering the United States in the year ended June 30, 1965 with the intention of remaining permanently, 18,760 were males and 19,567 females. Slightly more than one quarter, or 10,595, of the total native-born emigrants were males in the productive age group, 20-59 years. By occupation, the largest group of the total of 38,327 native-born persons was the professional or technical group which numbered 4,629; clerical and kindred workers numbered 3,979, and 2,320 were classed as craftsmen or foremen. On the other hand, 20,539 persons, or 53.6 p.c. of the total, were classed as housewives, children and others with no reported occupation. Altogether, 40.9 p.c. of the total were persons under 20 years of age.

Of the 50,035 persons entering the United States from Canada claiming Canada as country of last permanent residence—which of course includes native-born persons and those born in other countries who have resided in Canada—the Immigration and Naturalization Service of the United States Department of Justice lists 6,579 as professional, technical and kindred workers, 5,200 as clerical and kindred workers and 4,039 as craftsmen, foremen and kindred workers. Housewives, children and others with no reported occupation accounted for 24,790, or 49.5 p.c. of the total.

#### 12.—Canadian-Born Persons Entering the United States from Canada and Elsewhere, and All Persons Entering the United States from Canada, Years Ended June 30, 1956-65

NOTE.—Includes only persons who have declared their intention of remaining permanently in the United States when applying for a visa (see text above). SOURCE: Immigration and Naturalization Service, United States Department of Justice.

Year	Entering U.S. from Canada		Canadian-Born Entering U.S. from Elsewhere	Year	Entering U.S. from Canada		Canadian-Born Entering U.S. from Elsewhere
	Canadian-Born	All Persons			Canadian-Born	All Persons	
	No.	No.	No.		No.	No.	No.
1956.....	..	42,363	..	1961.....	31,312	47,470	726
1957.....	32,354	46,354	849	1962.....	29,569	44,272	808
1958.....	29,245	45,143	810	1963.....	35,320	50,509	683
1959.....	22,325	34,599	757	1964.....	37,351	51,114	723
1960.....	30,312	46,668	678	1965.....	37,519	50,035	808

## PART II.—CANADIAN CITIZENSHIP\*

### Section 1.—The Canadian Citizenship Act

The Canadian Citizenship Act came into force on Jan. 1, 1947, its purpose being to give a clear definition of Canadian citizenship and provide an underlying community of status for all the people of Canada. The administration of Canadian citizenship was the responsibility of the Department of Citizenship and Immigration from 1950 to Oct. 1, 1966 when, as a result of the proclamation of the Government Organization Act (SC 1966, c. 25), it was transferred to the Department of the Secretary of State.

Naturalization procedures and events leading to the passing of the Canadian Citizenship Act are given in the 1951 Year Book, pp. 153-155. The provisions of the Act and its several amendments are outlined in some detail in the 1955 Year Book, pp. 177-181. More briefly, they are given in the following paragraphs.

**Natural-Born Canadian Citizens, Born before Jan. 1, 1947.**—The Act conferred natural-born status upon two categories of persons in being on Jan. 1, 1947. These were (1) those born in Canada or on a Canadian ship or aircraft and who were not aliens on Jan. 1, 1947; and (2) those born of Canadian fathers outside of Canada who were not aliens on Jan. 1, 1947 and were either minors on that date or had already entered Canada for permanent residence.

The Act provides that a person born abroad who was a minor on Jan. 1, 1947 will automatically cease to be a Canadian citizen on his 24th birthday or on Jan. 1, 1954, whichever is the later date, unless he has his place of domicile in Canada at such date or has, before such date and after reaching the age of 21 years, filed a declaration of retention of Canadian citizenship.

**Natural-Born Canadian Citizens, Born after Dec. 31, 1946.**—A person born outside of Canada subsequent to that date, whose responsible parent is considered a Canadian citizen pursuant to the terms of the Canadian Citizenship Act, is a Canadian if his birth is registered with the Registrar of Canadian Citizenship within two years of its occurrence or within such extended period as the Minister may authorize in special cases.

A person who becomes a natural-born Canadian citizen in such a manner will automatically cease to be a Canadian citizen if he fails to file a declaration of retention prior to his 24th birthday or does not have his place of domicile in Canada upon that date.

**Canadian Citizens other than Natural-Born.**—Before the 1953 amendments to the Citizenship Act, the only persons who acquired Canadian citizenship on Jan. 1, 1947 through the transitional clauses of Sect. 9 were persons who were naturalized in Canada before that date, British subjects who had Canadian domicile at the commencement of the Act and women lawfully admitted to Canada and married prior to Jan. 1, 1947 whose husbands would have qualified as Canadian citizens if the Act had come into force before the date of marriage. Sect. 9 was amended on June 1, 1953, so that a British subject who had his place of domicile in Canada for at least 20 years immediately before Jan. 1, 1947 need not comply with the requirements of Canadian domicile provided he was not under an order of deportation on Jan. 1, 1947.

**Acquisition of Canadian Citizenship by Aliens and British Subjects.**—The Act provides a means of acquiring Canadian citizenship. An alien who wishes to become a Canadian citizen must apply through his local court or through one of the special citizenship courts now established. He must appear before the judge for a hearing and will in due course be granted citizenship if his application is approved by the judge and by the Minister. A British subject may apply for citizenship directly to the Minister. It should be added that a minor child does not automatically acquire Canadian citizenship upon the grant of citizenship to the responsible parent.

\* Prepared in the Citizenship Registration Branch under the direction of the Under Secretary of State, Ottawa.



**Status of Married Women.**—The Canadian Citizenship Act places no disabilities upon the married woman. She neither acquires nor does she lose Canadian citizenship by marriage. In order to acquire Canadian citizenship she must apply in exactly the same manner as does a man. There is, however, one advantage granted to her—if she is married to a Canadian citizen she may apply for citizenship after a residence of only one year in Canada.

The Canadian Citizenship Act also enables a woman married to an alien whose nationality she acquired upon marriage to divest herself of Canadian citizenship by the filing of a declaration of renunciation. Finally, it provides a means whereby a woman, who had become an alien through marriage prior to Jan. 1, 1947, may acquire the Canadian status she would otherwise have assumed on that date.

**Status of Minor Children.**—The minor child of a Canadian citizen other than a natural-born Canadian may receive a certificate of Canadian citizenship upon application therefor by his or her responsible parent, *de facto* guardian, or mother if she has custody of the child. Provision is also made in the Citizenship Act for the granting of a certificate of citizenship to a minor child in special circumstances.

**Loss of Canadian Citizenship.**—Canadian citizenship may be lost in the following manner:—

- (1) A Canadian citizen who when outside of Canada and not under disability acquires by a voluntary and formal act other than marriage the nationality or citizenship of a country other than Canada. This does not apply if the country is at war with Canada at the time of acquisition but in such a case the Minister may order that he cease to be a Canadian citizen. The purpose of this is to hold the person, if deemed necessary, to his obligations as a Canadian.
- (2) A natural-born Canadian citizen who is a dual national by birth or through naturalization, and any Canadian citizen on marriage, may after attaining the age of 21 cease to be a Canadian citizen through the making of a declaration of renunciation thereof.
- (3) A Canadian citizen who under the law of another country is a national or citizen of such country and who serves in the armed forces of such country when it is at war with Canada. This does not apply if the Canadian citizen became a national or citizen of such country when it was at war with Canada.
- (4) An other-than-natural-born Canadian citizen, unless he served outside Canada in the Armed Forces of Canada in time of war or other related circumstances, or unless otherwise exempt, loses his citizenship automatically if he has resided outside of Canada for ten consecutive years. The period of absence may, however, be extended upon request if the application is filed and granted before loss occurs and if good and sufficient reason exists.

**Loss of Citizenship by Revocation—Applicable Only to Naturalized Persons.**—In 1958 the Canadian Citizenship Act was amended and limited the provisions regarding loss of Canadian citizenship to the following: the citizenship of a Canadian citizen other than a natural-born Canadian citizen may be revoked by the Governor in Council if, upon a report from the Minister, he is satisfied that such Canadian citizen, having been charged with the offence of treason under the Criminal Code or with an offence under the Official Secrets Act, has failed or refused to return to Canada voluntarily within such time as may be prescribed in a notice sent by the Minister to such person at his last known address and has not appeared at the preliminary inquiry into such offence or at the trial of such offence, or both as the case may be; or has obtained a certificate of naturalization or of Canadian citizenship by false representation or fraud or by concealment of material circumstances.

**Doubt as to Loss of Citizenship.**—Where in the opinion of the Minister a doubt exists as to whether a person has ceased to be a Canadian citizen, the Minister may refer the question to the Commission referred to in Subsection (4) of Section 19 for a ruling and the decision of the Commission or the Court, as the case may be, shall be final.

**Loss of Citizenship by Revocation—Applicable to Both Natural-Born and Naturalized Persons.**—The Governor in Council may in his discretion order that any person shall cease

to be a Canadian citizen if, upon a report from the Minister in charge of immigration, he is satisfied that such person has, when not under a disability (1) acquired voluntarily, when in Canada, the citizenship of a foreign country (other than by marriage), (2) taken or made an oath, affirmation, or other declaration of allegiance to a foreign country, or (3) made a declaration renouncing his Canadian citizenship.

## Section 2.—Canadian Citizenship Statistics

According to the 1961 Census, which required that each person state the country to which he owed allegiance and had citizenship rights as at June 1, 1961, less than 6 p.c. of Canada's population reported a country of citizenship other than Canada. Table 1 shows the citizenship of the population by province.

### 1.—Citizenship of the Population, by Province, Census 1961

Province or Territory	Canadian	Other Common- wealth	United States	European Countries	Asiatic	Other	Total
	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	455,282	1,186	499	763	95	28	457,853
Prince Edward Island.....	103,618	337	283	364	16	11	104,629
Nova Scotia.....	725,686	4,568	2,254	4,122	237	140	737,007
New Brunswick.....	590,662	2,003	2,573	2,443	112	143	597,936
Quebec.....	5,078,082	31,491	16,585	121,278	4,608	7,167	5,259,211
Ontario.....	5,673,098	184,429	36,329	317,216	7,309	17,711	6,236,092
Manitoba.....	879,187	10,059	3,242	26,347	688	2,163	921,686
Saskatchewan.....	902,106	5,946	3,656	11,664	969	840	925,181
Alberta.....	1,240,895	21,353	11,674	53,129	1,982	2,911	1,331,944
British Columbia.....	1,498,498	44,647	10,908	64,641	6,973	3,415	1,629,082
Yukon and Northwest Territories.....	35,315	671	309	1,228	44	59	37,626
<b>Canada.....</b>	<b>17,182,429</b>	<b>306,690</b>	<b>88,312</b>	<b>603,195</b>	<b>23,033</b>	<b>34,588</b>	<b>18,238,247</b>

**Citizenship Certificates Issued and Granted.**—Citizenship certificates "issued", as shown in Table 2, include both certificates granted to new citizens and those issued for various reasons to persons who were already Canadian citizens; certificates "granted" means that the holders became Canadian citizens by the grant of such certificates.

### 2.—Citizenship Certificates Issued and Granted, by Status of Recipient, 1964 and 1965

Certificates	1964	1965	Certificates	1964	1965
	No.	No.		No.	No.
<b>Issued—</b>			<b>Granted to—concluded</b>		
To Canadians by—			Alien.....	52,940	51,775
Birth.....	1,439	1,775	Adults.....	40,942	39,541
Naturalization.....	1,586	1,683	Minors.....	11,190	11,510
Marriage.....	375	296	Adopted or legitimated.....	365	369
Domicile.....	1,603	1,626	Re-acquisition of status.....	443	355
To remove doubt.....	12	18	<b>Totals, Granted.....</b>	<b>64,334</b>	<b>63,844</b>
Resumption.....	98	285	<b>Totals, Issued and Granted.....</b>	<b>119,712</b>	<b>123,940</b>
Replacements.....	2,881	4,843	<b>Miscellaneous—</b>		
Minutemen.....	47,384	49,570	Retention.....	195	324
<b>Totals, Issued.....</b>	<b>55,378</b>	<b>60,096</b>	Registration of births abroad... ..	6,565	6,342
<b>Granted to—</b>			Extension <sup>1</sup> .....	138	153
British.....	11,394	12,069	Loss by—		
Adults.....	9,001	9,442	Alienation.....	700	767
Minors.....	2,295	2,611	Revocation.....	—	1
Adopted or legitimated.....	98	116			

<sup>1</sup> Represents only those cases reported to the Citizenship Branch by posts abroad.

**Characteristics of Persons Granted Citizenship Certificates in 1965.**—Comparable detailed statistics showing the characteristics of persons granted citizenship certificates are available since 1953; such characteristics include age, marital status, occupation, period of immigration, residence and previous nationality. The number of applicants fluctuates from year to year but it is known that about 40 p.c. of the immigrants who entered Canada during the past ten years who are eligible for Canadian citizenship have become Canadians.

Of the 63,844 persons granted citizenship in 1965, fewer than 1 p.c. had immigrated to Canada before 1921, 2 p.c. in the period 1921-40, 7 p.c. in the period 1941-50 and 91 p.c. after 1950. Regionally, these new citizens were distributed as follows: 2 p.c. in the Atlantic Provinces, 18 p.c. in Quebec, 54 p.c. in Ontario, 14 p.c. in the Prairie Provinces and 12 p.c. in British Columbia. Almost 87 p.c. of them resided in urban centres.

About 18 p.c. of the persons naturalized in 1965 previously owed allegiance to a British Commonwealth country, 17 p.c. were former citizens of Italy, 13 p.c. of Germany, 9 p.c. of the Netherlands, 5 p.c. of Hungary, 5 p.c. of Greece and 5 p.c. of Yugoslavia. Most of the persons designated as "stateless" were born in Poland, the U.S.S.R., Yugoslavia, Hungary, Germany, Czechoslovakia and Romania.

Among the males in the labour force naturalized in 1965, craftsmen, production process and related workers occupations were reported by 44 p.c., 12 p.c. were in service and recreation occupations, 12 p.c. were in professional and technical occupations, labourers accounted for 8 p.c., managerial occupations for 6 p.c., clerical workers for 4 p.c. and farmers and farm workers for 4 p.c. each. Of the females, 46 p.c. were homemakers and, among those employed outside the home, 31 p.c. were in the craftsmen, production process and related workers occupations group, 26 p.c. were in service and recreation occupations and 24 p.c. were in clerical occupations.

### 3.—Persons Granted Citizenship Certificates in 1964 and 1965, by Province of Residence, and Period of Immigration to Canada

Year and Residence	Period of Immigration						Born in Canada <sup>1</sup>	Total
	Before 1921	1921-1930	1931-1940	1941-1950	1951-1960	1961-1964		
	No.	No.	No.	No.	No.	No.	No.	No.
<b>1964</b>								
<b>Residing in Canada</b> .....	<b>538</b>	<b>794</b>	<b>263</b>	<b>4,570</b>	<b>56,245</b>	<b>1,618</b>	<b>173</b>	<b>64,201</b>
Newfoundland.....	1	1	—	19	119	5	—	145
Prince Edward Island.....	—	3	2	8	31	3	—	47
Nova Scotia.....	5	7	7	59	434	29	4	545
New Brunswick.....	1	6	—	33	242	20	1	303
Quebec.....	67	115	29	492	10,549	309	26	11,587
Ontario.....	119	277	104	2,287	31,080	862	69	34,798
Manitoba.....	46	68	20	275	2,106	62	9	2,586
Saskatchewan.....	63	68	18	125	800	19	15	1,108
Alberta.....	88	133	50	595	4,417	107	24	5,414
British Columbia.....	148	113	33	669	6,314	197	24	7,498
Yukon and N.W.T.....	—	3	—	8	153	5	1	170
<b>Residing Outside Canada</b> .....	<b>1</b>	<b>2</b>	<b>1</b>	<b>12</b>	<b>94</b>	<b>12</b>	<b>11</b>	<b>133</b>
<b>Totals, Naturalized</b> .....	<b>539</b>	<b>796</b>	<b>264</b>	<b>4,582</b>	<b>56,339</b>	<b>1,630</b>	<b>184</b>	<b>64,334</b>

<sup>1</sup> Canadian-born persons who lost their citizenship by marriage; this applies to females only.



### 3.—Persons Granted Citizenship Certificates in 1964 and 1965, by Province of Residence, and Period of Immigration to Canada—concluded

Year and Residence	Period of Immigration						Born in Canada <sup>1</sup>	Total
	Before 1921	1921-1930	1931-1940	1941-1950	1951-1960	1961-1965		
1965	No.	No.	No.	No.	No.	No.	No.	No.
<b>Residing in Canada.....</b>	<b>446</b>	<b>750</b>	<b>283</b>	<b>4,162</b>	<b>55,168</b>	<b>2,763</b>	<b>126</b>	<b>63,695</b>
Newfoundland.....	—	—	1	9	66	7	—	83
Prince Edward Island.....	—	—	1	6	39	8	1	55
Nova Scotia.....	6	7	—	43	409	19	1	485
New Brunswick.....	3	1	—	23	216	26	1	270
Quebec.....	61	107	38	434	10,347	504	18	11,509
Ontario.....	86	275	105	2,283	30,522	1,493	37	34,801
Manitoba.....	36	63	26	198	2,241	98	9	2,671
Saskatchewan.....	63	78	23	93	637	50	16	960
Alberta.....	73	111	47	453	4,333	196	20	5,233
British Columbia.....	117	105	41	613	6,211	360	23	7,470
Yukon and N.W.T.....	1	3	1	7	147	2	—	161
<b>Residing Outside Canada.....</b>	<b>1</b>	<b>—</b>	<b>3</b>	<b>12</b>	<b>92</b>	<b>25</b>	<b>13</b>	<b>146</b>
<b>Totals, Naturalized.....</b>	<b>447</b>	<b>750</b>	<b>286</b>	<b>4,174</b>	<b>55,260</b>	<b>2,788</b>	<b>139</b>	<b>63,844</b>

<sup>1</sup> Canadian-born persons who lost their citizenship by marriage; this applies to females only.

### 4.—Persons Granted Citizenship Certificates in 1964 and 1965, by Age Group, Occupation and Sex

Age Group and Occupation	1964			1965		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
<b>Age Group</b>						
0-14 years.....	3,924	3,631	7,555	3,895	3,550	7,445
15-19 ".....	3,088	2,671	5,759	3,346	3,051	6,397
20-29 ".....	8,590	6,563	15,153	7,926	6,832	14,758
30-39 ".....	10,694	7,827	18,521	9,996	7,820	17,816
40-49 ".....	5,366	4,345	9,711	5,307	4,403	9,710
50-59 ".....	2,398	2,312	4,710	2,472	2,352	4,824
60-69 ".....	1,107	1,203	2,310	1,065	1,304	2,369
70+ ".....	322	293	615	275	250	525
<b>Totals.....</b>	<b>35,489</b>	<b>28,845</b>	<b>64,334</b>	<b>34,282</b>	<b>29,562</b>	<b>63,844</b>
<b>Occupation</b>						
Managerial.....	1,549	151	1,700	1,661	173	1,834
Professional and technical.....	3,112	1,014	4,126	3,093	1,129	4,222
Clerical.....	1,329	2,252	3,581	1,043	2,297	3,340
Transport and communication.....	988	47	1,035	846	60	906
Sales.....	865	366	1,231	902	347	1,249
Service and recreation.....	3,411	2,488	5,899	3,205	2,480	5,685
Farmers and farm workers.....	1,120	44	1,164	1,099	40	1,139
Fishermen, trappers and loggers.....	174	—	174	251	—	251
Miners, quarrymen and related workers.....	360	1	361	347	—	347
Craftsmen, production process and related workers.....	12,444	3,035	15,479	11,668	3,022	14,690
Labourers, <i>n.e.s.</i> .....	2,518	19	2,537	2,146	25	2,171
Homemakers.....	—	13,425	13,425	—	13,610	13,610
No occupation (including students, retired, etc.).....	4,040	2,701	6,741	3,844	2,590	6,434
Children under 14 years of age.....	3,281	3,073	6,354	3,299	3,040	6,339
Not stated <sup>1</sup> .....	298	229	527	878	749	1,627

<sup>1</sup> Mainly children over 14 years of age.

## 5.—Persons Granted Citizenship Certificates in 1964 and 1965, by Country of Birth

Country of Birth	1964	1965	Country of Birth	1964	1965
	No.	No.		No.	No.
Algeria.....	39	59	Morocco.....	206	122
Argentina.....	95	74	Netherlands.....	5,951	5,809
Australia.....	108	104	Norway.....	228	185
Austria.....	1,143	977	Poland.....	3,692	3,795
Belgium.....	849	737	Portugal.....	1,195	1,464
Britain.....	8,149	8,429	Romania.....	593	746
British Guiana (now Guyana).....	128	130	South Africa.....	161	174
Canada.....	347	274	Spain.....	210	215
China.....	1,920	1,914	Sweden.....	138	138
Czechoslovakia.....	480	433	Switzerland.....	309	337
Denmark.....	990	804	Turkey.....	198	180
Egypt.....	227	167	Union of Soviet Socialist Republics <sup>1</sup>	2,069	1,959
Finland.....	661	718	United States.....	783	878
France.....	852	851	West Indies.....	612	722
Germany.....	7,647	7,139	Yugoslavia.....	3,324	3,359
Greece.....	3,216	3,339	Other.....	898	973
Hong Kong.....	179	281			
Hungary.....	4,455	3,632	<b>Totals, All Countries.....</b>	<b>64,334</b>	<b>63,844</b>
India.....	473	609			
Indonesia.....	127	99	Commonwealth.....	10,679	11,254
Ireland, Republic of.....	543	548	Other Asia.....	3,033	3,150
Israel.....	301	355	Other Europe.....	48,886	47,719
Italy.....	10,259	10,453	South America.....	293	337
Japan.....	72	95	United States.....	783	878
Lebanon.....	281	332	Other.....	660	506
Malta.....	226	235			

<sup>1</sup> Includes Baltic countries.

## 6.—Persons Granted Citizenship Certificates in 1964 and 1965, by Country of Former Allegiance

Country of Former Allegiance	1964	1965	Country of Former Allegiance	1964	1965
	No.	No.		No.	No.
Commonwealth countries.....	11,405	12,069	Lebanon.....	310	354
Austria.....	1,059	926	Lithuania.....	180	135
Belgium.....	779	656	Netherlands.....	6,146	5,960
Bulgaria.....	28	29	Norway.....	246	184
China.....	1,922	1,886	Poland.....	3,229	3,212
Czechoslovakia.....	248	235	Portugal.....	1,196	1,466
Denmark.....	1,021	815	Romania.....	234	271
Estonia.....	214	198	Spain.....	211	214
Finland.....	658	723	Sweden.....	126	123
France.....	957	925	Switzerland.....	315	333
Germany.....	8,566	8,054	Turkey.....	155	141
Greece.....	3,275	3,334	Union of Soviet Socialist Republics	1,085	1,082
Hungary.....	4,332	3,456	United States.....	995	1,056
Israel.....	948	1,331	Yugoslavia.....	3,125	3,167
Italy.....	10,333	10,549	Other.....	679	579
Japan.....	76	96			
Latvia.....	251	199	<b>Totals, All Countries.....</b>	<b>64,334</b>	<b>63,844</b>



The Canadian population, although basically made up of British Isles and French ethnic groups, is a mosaic of people whose forbears or who themselves have come from many lands. More than 42 p.c. of them are under 20 years of age.



## CHAPTER V.—VITAL STATISTICS\*

### CONSPECTUS

	PAGE		PAGE
SECTION 1. SUMMARY OF VITAL STATISTICS . . .	235	SECTION 5. MARRIAGES AND DIVORCES . . . . .	267
SECTION 2. BIRTHS . . . . .	241	Subsection 1. Marriages . . . . .	267
SECTION 3. DEATHS . . . . .	251	Subsection 2. Divorces . . . . .	271
Subsection 1. General Mortality . . . . .	251	SECTION 6. CANADIAN LIFE TABLES . . . . .	271
Subsection 2. Infant Mortality . . . . .	259	SECTION 7. INTERNATIONAL COMPARISONS OF	
Subsection 3. Maternal Mortality . . . . .	263	VITAL STATISTICS . . . . .	275
SECTION 4. NATURAL INCREASE . . . . .	265		

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

Vital statistics provide a key to the interpretation of population development—a measure of the pace at which it is growing, the rate at which women are marrying and reproducing, and the effect this has on the age and sex distribution of the population, as well as the relative importance of the diseases that cause death each year. Vital statistics constitute the record of births, deaths, marriages and divorces registered in the provinces and territories of Canada. The continuity of such data gives a constant guide to the planning, operation and evaluation of many national activities, particularly in the fields of public health, education, community planning and various types of business enterprise.

This Chapter gives a fairly detailed coverage of the vital statistics information available, gives life tables for males and females and presents a comparison of the principal Canadian vital statistics rates with those of other countries. In making international and interprovincial comparisons of birth, death and marriage rates, it is important to note that part of the differences observed over a period of years as between countries, provinces or local areas may be caused by differences in the sex and age distribution of the populations involved. Similarly, rates for any one area may be affected by changes in such distribution. The population data upon which vital statistics rates are computed are given in Chapter III of this volume. Births and deaths are classified by place of residence (births according to the residence of the mother) and marriages by place of occurrence.

The history of the collection of vital statistics in Canada is covered in the 1948-49 Year Book, pp. 185-188. Detailed information is given in *Vital Statistics* (Preliminary Report) (Catalogue No. 84-201), *Vital Statistics of Canada* (Catalogue No. 84-202) and in other regular and special reports; in addition, certain unpublished data are available on request.

### Section 1.—Summary of Vital Statistics

Table 1 gives a summary for reference purposes of the principal vital statistics of the provinces and territories of Canada for five-year periods 1941-60 and for single years 1962-64. Table 2 shows similar data for urban centres having at least 20,000 population at the date of the 1961 Census for the year 1964 with comparative averages for 1956-60.

\* Revised in the Vital Statistics Section, Health and Welfare Division, Dominion Bureau of Statistics.

## 1.—Summary of Principal Vital Statistics, by Province, 1941-64

NOTE.—Figures from 1921, when the collection of national statistics was initiated, are given in previous editions of the Year Book. Figures for neonatal mortality (within the first four weeks of birth) are given on p. 262 and those for divorces on p. 271.

Province and Year	Live Births		Deaths		Natural Increase <sup>1</sup>		Infant Mortality <sup>2</sup>		Maternal Mortality		Marriages	
	No.	Rate <sup>3</sup>	No.	Rate <sup>3</sup>	No.	Rate <sup>3</sup>	No.	Rate <sup>4</sup>	No.	Rate <sup>5</sup>	No.	Rate <sup>3</sup>
<b>Newfoundland—</b>												
Av. 1941-45.....	9,292	29.8	3,681	11.8	5,611	18.0	852	91.7	39	41.8	2,967	9.5
" 1946-50.....	12,352	36.2	3,179	9.3	9,173	26.9	754	61.1	25	19.9	2,711	8.0
" 1951-55.....	13,101	34.1	2,926	7.6	10,175	26.5	598	45.6	24	18.3	2,836	7.4
" 1956-60.....	14,934	34.6	3,114	7.2	11,820	27.4	585	39.2	17	11.4	3,032	7.0
1962.....	15,064	32.1	3,198	6.8	11,866	25.3	597	39.6	5	3.3	3,274	7.0
1963.....	15,443	32.1	3,183	6.6	12,260	25.5	592	38.3	7	4.5	3,280	6.8
1964.....	14,680	29.9	3,063	6.2	11,617	23.7	456	31.1	6	4.1	3,385	6.9
<b>P.E. Island—</b>												
Av. 1941-45.....	2,180	23.7	964	10.5	1,216	13.2	114	52.4	9	39.4	686	7.5
" 1946-50.....	2,869	30.5	922	9.8	1,947	20.7	114	39.7	4	13.2	677	7.2
" 1951-55.....	2,720	27.2	923	9.2	1,797	18.0	88	32.4	2	8.1	623	6.2
" 1956-60.....	2,674	26.6	953	9.5	1,721	17.1	87	32.7	1	3.0	645	6.4
1962.....	2,805	26.5	1,056	10.0	1,749	16.5	87	31.0	—	—	677	6.4
1963.....	2,949	27.6	979	9.1	1,970	18.5	63	21.4	3	10.2	684	6.4
1964.....	2,727	25.5	981	9.2	1,746	16.3	72	26.4	—	—	662	6.2
<b>Nova Scotia—</b>												
Av. 1941-45.....	15,146	25.2	6,326	10.5	8,820	14.7	870	57.5	41	26.9	6,302	10.5
" 1946-50.....	17,994	28.9	6,042	9.7	11,952	19.2	760	42.2	22	12.0	5,525	8.9
" 1951-55.....	18,246	27.5	5,802	8.8	12,444	18.7	586	32.1	13	6.9	5,283	8.0
" 1956-60.....	19,097	26.9	6,062	8.5	13,035	18.4	559	29.3	9	4.7	5,289	7.4
1962.....	19,432	26.0	6,342	8.5	13,090	17.5	614	31.6	9	4.6	5,256	7.0
1963.....	18,976	25.1	6,367	8.4	12,609	16.7	513	27.0	2	1.1	5,127	6.8
1964.....	18,314	24.1	6,384	8.4	11,930	15.7	464	25.3	9	4.9	5,339	7.0
<b>New Brunswick—</b>												
Av. 1941-45.....	13,037	28.2	5,050	10.9	7,987	17.3	960	73.7	42	32.1	4,433	9.6
" 1946-50.....	16,878	34.0	4,886	9.8	11,992	24.2	1,015	60.1	23	13.6	4,864	9.8
" 1951-55.....	16,496	31.0	4,576	8.6	11,920	22.4	717	43.5	16	9.5	4,306	8.1
" 1956-60.....	16,567	29.0	4,640	8.1	11,927	20.9	567	34.2	8	4.6	4,357	7.6
1962.....	16,467	27.1	4,788	7.9	11,679	19.2	498	30.2	7	4.3	4,382	7.2
1963.....	15,771	25.7	4,815	7.8	10,956	17.9	435	27.6	6	3.8	4,391	7.2
1964.....	15,338	24.9	4,736	7.7	10,602	17.2	400	26.1	10	6.5	4,611	7.5
<b>Quebec—</b>												
Av. 1941-45.....	97,906	28.4	34,273	9.9	63,633	18.5	6,690	68.3	318	32.5	33,126	9.6
" 1946-50.....	115,496	30.4	33,723	8.9	81,773	21.5	6,205	53.7	227	19.7	34,874	9.2
" 1951-55.....	128,523	30.0	34,269	8.0	94,254	22.0	5,662	44.1	149	11.6	35,584	8.3
" 1956-60.....	139,844	28.6	35,714	7.3	104,130	21.3	5,000	35.8	105	7.5	36,798	7.5
1962.....	135,000	25.2	37,142	6.9	97,858	18.3	4,294	31.8	69	5.1	37,038	6.9
1963.....	133,640	24.4	38,217	7.0	95,423	17.4	4,012	30.0	61	4.6	37,358	6.8
1964.....	130,845	23.5	37,552	6.8	93,293	16.7	3,587	27.4	50	3.8	39,400	7.1
<b>Ontario—</b>												
Av. 1941-45.....	77,738	19.9	39,738	10.2	38,000	9.7	3,276	42.1	197	25.3	38,042	9.7
" 1946-50.....	105,161	24.6	42,214	9.9	62,947	14.7	3,795	36.1	129	12.3	44,084	10.3
" 1951-55.....	128,861	26.1	44,715	9.0	84,146	17.1	3,634	28.2	83	6.5	45,213	9.1
" 1956-60.....	152,688	26.4	49,431	8.5	103,257	17.9	3,741	24.5	65	4.2	46,482	8.0
1962.....	156,053	24.6	52,156	8.2	103,897	16.4	3,621	23.2	54	3.5	44,454	7.0
1963.....	155,089	24.1	53,617	8.3	101,472	15.8	3,532	22.8	46	3.0	45,306	7.0
1964.....	152,729	23.2	52,204	7.9	100,525	15.3	3,255	21.3	43	2.8	48,501	7.4
<b>Manitoba—</b>												
Av. 1941-45.....	15,831	21.8	6,633	9.1	9,198	12.7	814	51.4	41	26.0	7,295	10.0
" 1946-50.....	19,325	25.9	6,702	9.0	12,623	16.9	810	41.9	24	12.6	7,605	10.2
" 1951-55.....	21,321	26.4	6,775	8.4	14,546	18.0	675	31.7	15	7.0	7,104	8.8
" 1956-60.....	22,408	25.6	7,293	8.3	15,115	17.3	671	30.0	10	4.6	6,600	7.5

For footnotes, see end of table.

## 1.—Summary of Principal Vital Statistics, by Province, 1941-64—concluded

Province or Territory and Year	Live Births		Deaths		Natural Increase <sup>1</sup>		Infant Mortality <sup>2</sup>		Maternal Mortality		Marriages	
	No.	Rate <sup>3</sup>	No.	Rate <sup>4</sup>	No.	Rate <sup>3</sup>	No.	Rate <sup>4</sup>	No.	Rate <sup>5</sup>	No.	Rate <sup>3</sup>
<b>Manitoba—concl.</b>												
1962.....	22,918	24.5	7,453	8.0	15,465	16.5	600	26.2	7	3.1	6,354	6.8
1963.....	22,751	23.9	7,928	8.3	14,823	15.6	561	24.7	10	4.4	6,694	7.0
1964.....	21,754	22.7	7,721	8.1	14,033	14.6	555	25.5	4	1.8	6,796	7.1
<b>Saskatchewan—</b>												
Av. 1941-45.....	18,444	21.7	6,437	7.6	12,007	14.1	858	46.5	52	28.1	6,541	7.7
" 1946-50.....	21,907	26.3	6,473	7.8	15,434	18.5	883	40.3	29	13.1	7,413	8.9
" 1951-55.....	23,554	27.5	6,547	7.6	17,007	19.9	743	31.5	16	6.9	6,876	8.0
" 1956-60.....	24,046	26.9	6,753	7.5	17,293	19.4	634	26.3	9	3.8	6,395	7.1
1962.....	23,341	25.1	7,004	7.5	16,337	17.6	605	25.9	5	2.1	6,044	6.5
1963.....	23,543	25.2	7,441	8.0	16,102	17.2	638	27.1	7	3.0	6,197	6.6
1964.....	22,682	24.1	7,373	7.8	15,309	16.3	589	26.0	5	2.2	6,382	6.8
<b>Alberta—</b>												
Av. 1941-45.....	18,845	23.7	6,355	8.0	12,490	15.7	827	43.9	46	24.2	7,977	10.0
" 1946-50.....	24,290	28.4	6,814	8.0	17,476	20.4	889	38.6	25	10.5	9,090	10.6
" 1951-55.....	31,087	30.6	7,527	7.4	23,560	23.2	894	28.7	15	5.0	9,750	9.6
" 1956-60.....	36,920	30.6	8,329	6.9	28,591	23.7	940	25.5	13	3.5	10,230	8.5
1962.....	38,804	28.3	9,264	6.8	29,540	21.5	984	25.4	16	4.1	10,423	7.6
1963.....	38,467	27.4	9,444	6.7	29,023	20.7	908	23.6	11	2.9	10,163	7.2
1964.....	36,169	25.3	9,482	6.6	26,687	18.7	865	23.9	8	2.2	10,634	7.4
<b>British Columbia—</b>												
Av. 1941-45.....	17,705	19.8	9,368	10.5	8,337	9.3	684	38.6	46	26.2	9,535	10.7
" 1946-50.....	25,859	24.0	10,992	10.2	14,867	13.9	868	33.6	31	11.9	11,564	10.7
" 1951-55.....	31,347	25.1	12,233	9.8	19,114	15.3	856	27.3	17	5.4	11,131	8.9
" 1956-60.....	38,930	25.7	13,980	9.2	24,950	16.5	1,011	26.0	16	4.1	11,955	7.9
1962.....	38,128	23.0	14,912	9.0	23,216	14.0	878	23.0	17	4.5	11,196	6.7
1963.....	37,478	22.1	15,029	8.9	22,449	13.2	879	23.5	11	2.9	11,677	6.9
1964.....	35,897	20.7	16,051	9.2	19,846	11.5	818	22.8	2	0.6	12,158	7.0
<b>Yukon Territory—</b>												
Av. 1941-45.....	105	21.0	96	19.3	9	1.7	11	100.8	1	57.0	60	12.1
" 1946-50.....	254	31.7	91	11.4	163	20.3	16	63.0	--	15.8	73	9.1
" 1951-55.....	413	43.0	90	9.4	323	33.6	22	52.8	--	4.8	94	9.8
" 1956-60.....	505	39.4	91	7.1	414	32.3	22	43.6	--	4.0	109	8.5
1962.....	547	36.5	75	5.0	472	31.5	27	49.4	1	18.3	109	7.3
1963.....	499	33.3	81	5.4	418	27.9	16	32.1	--	--	95	6.3
1964.....	514	32.1	87	5.4	427	26.7	20	38.9	--	--	94	5.9
<b>Northwest Territories—</b>												
Av. 1941-45.....	383	31.9	332	27.7	51	4.2	72	188.5	2	47.0	95	7.9
" 1946-50.....	626	39.1	372	23.2	254	15.9	87	138.7	3	54.3	139	8.7
" 1951-55.....	666	40.1	284	17.1	382	23.0	78	117.1	2	36.0	115	6.9
" 1956-60.....	943	46.7	310	15.3	633	31.4	135	143.2	3	29.7	155	7.7
1962.....	1,134	47.3	309	12.9	825	34.4	136	119.9	1	8.8	174	7.3
1963.....	1,161	48.4	266	11.1	895	37.3	121	104.2	1	8.6	139	5.8
1964.....	1,266	50.6	216	8.6	1,050	42.0	88	69.5	--	--	173	6.9
<b>Canada—<sup>6</sup></b>												
Av. 1941-45.....	277,320	23.5	115,572	9.8	161,748	13.7	15,176	54.7	793	29.0	114,091	9.7
" 1946-50.....	355,748	27.4	120,438	9.3	235,310	18.1	15,723	44.2	527	14.9	126,898	9.8
" 1951-55.....	416,334	28.0	126,666	8.5	289,668	19.5	14,552	35.0	353	8.5	128,915	8.7
" 1956-60.....	469,555	27.6	136,669	8.0	332,886	19.6	13,953	29.7	255	5.4	132,047	7.8
1962.....	469,693	25.3	143,699	7.7	325,994	17.6	12,941	27.6	191	4.1	129,351	7.0
1963.....	465,767	24.6	147,367	7.8	318,400	16.8	12,270	26.3	165	3.5	131,111	6.9
1964.....	452,915	23.5	145,850	7.6	307,065	15.9	11,169	24.7	137	3.0	138,135	7.2

<sup>1</sup> Excess of births over deaths.<sup>2</sup> Deaths under one year of age; deaths within the first four weeks of<sup>3</sup> Per 1,000 population.<sup>4</sup> Per 1,000 live births.<sup>5</sup> Per 10,000 live births.

birth are given on p. 262.

<sup>6</sup> Figures for Newfoundland are included from 1949.



## 2.—Summary of Principal Vital Statistics for Incorporated Urban Centres of 20,000 Population or Over,<sup>1</sup> 1964 with Average for 1956-60

NOTE.—Birth, death and natural increase rates cannot be computed for 1964 or the period 1956-60 since urban centre populations are not known for intercensal periods. Urban centres are designated in this table by the following abbreviations: c.=city, t.=town, vl.=village and d.m.=district municipality.

Province and Urban Centre	Live Births		Deaths		Natural Increase <sup>2</sup>	Infant Mortality <sup>3</sup>		Neonatal Mortality <sup>4</sup>		Marriages <sup>5</sup>	
	1964		1964		1964	1964		1964		1964	
	Av. 1956-60	No.	Av. 1956-60	No.	Av. 1956-60	Rate <sup>6</sup>	No.	Av. 1956-60	Rate <sup>6</sup>	Av. 1956-60	No.
<b>Newfoundland—</b>											
Corner Brook, c.	940	784	127	118	813	866	26	33.2	21.5	210	235
St. John's, c.	2,010	2,188	521	569	1,489	1,619	47	21.5	21.8	689	723
<b>Prince Edward Island—</b>											
Charlottetown, c. <sup>7</sup>	456	384	210	229	246	155	15	39.1	24.6	172	152
<b>Nova Scotia—</b>											
Dartmouth, c.	881	1,719	136	248	745	1,471	36	20.9	16.3	177	280
Glace Bay, t.	623	598	219	217	404	381	20	33.4	26.0	11	18.4
Halifax, c.	2,441	1,976	762	735	1,679	1,241	49	24.8	17.0	40	20.2
Sydney, c.	950	818	259	282	691	536	19	23.2	8.4	12	14.7
<b>New Brunswick—</b>											
Moncton, c.	1,050	1,008	274	313	776	695	16	15.9	14.5	12	11.9
Saint John, c.	1,499	1,462	589	563	910	899	31	21.2	17.9	23	15.7
<b>Quebec—</b>											
Cap de la Madeleine, c.	723	618	152	161	571	457	12	19.4	22.1	10	16.2
Chicoutimi, c.	1,004	794	188	190	816	604	33	41.6	29.7	23	29.0
Chomedey, c.	752	1,108	96	155	656	953	19	17.1	15.6	14	12.6
Drummondville, c.	746	915	187	227	559	460	54	78.6	25.5	24	34.9
Granby, c.	877	915	180	228	697	687	30	32.8	18.7	22	24.0
Hull, c.	1,742	1,644	385	429	1,357	1,215	55	33.5	24.2	39	23.7
Jacques Cartier, c.	1,233	1,309	202	226	1,031	1,083	27	20.6	21.4	18	13.8
Jonquière, c.	992	714	138	153	854	561	21	29.4	20.8	12	16.8
LaSalle, c.	886	834	274	299	612	535	21	26.4	12.9	17	20.4
Longueuil, c.	858	1,182	155	203	703	979	28	23.7	12.4	20	16.9
Montreal, c.	29,478	26,031	10,241	9,359	19,237	16,100	14	22.6	15.8	12	19.4
Montreal North, c.	1,428	1,514	192	211	936	1,155	595	22.9	19.0	444	11,163
Mont Royal, t.	1,287	1,245	96	114	131	131	3	21.1	17.1	32	21.1
Outremont, c.	337	343	294	250	43	93	8	12.2	14.5	1	4.1
Pointe aux Trembles, c.	510	630	120	209	390	421	11	17.5	21.2	9	14.3

Pointe Claire, c.....	448	400	111	131	2,776	1,931	18.8	6	15.0	11.6	2	5.0	89	125
Quebec, c.....	4,345	3,550	1,569	1,619	2,776	1,931	39.1	101	28.5	22.9	78	22.0	1,556	1,512
Ste. Foy, c.....	790	1,161	238	185	641	976	46.9	24	20.7	15.6	21	18.1	59	142
St. Hyacinthe, c.....	490	476	236	271	254	205	21.1	11	23.1	19.6	5	10.5	208	225
St. Jean, c.....	777	668	162	167	615	491	26.5	16	24.3	16.0	13	19.8	207	206
St. Jérôme, c.....	661	686	150	198	511	488	34.5	17	24.8	24.5	13	19.0	219	257
St. Laurent, c.....	1,029	686	162	266	899	703	19.3	17	20.4	13.2	14	13.6	212	316
St. Michel, c.....	1,132	2,133	158	262	1,375	1,871	25.8	47	22.0	16.8	40	18.8	128	252
Shawinigan, c.....	1,533	882	186	201	696	415	43.1	20	32.5	32.9	13	21.1	235	263
Shawinigan, c.....	1,771	1,893	182	608	1,285	1,415	29.5	55	29.1	16.3	40	21.1	515	613
Shawinigan, c.....	1,668	462	138	126	530	336	35.4	12	26.0	18.3	8	17.3	146	155
Theftord Mines, c.....	1,512	1,352	405	431	1,107	921	34.5	43	31.8	22.0	28	20.7	459	469
Trois-Rivières, c.....	1,701	1,688	196	186	565	502	34.9	25	36.3	21.7	22	32.0	239	237
Valleyfield, c.....	1,823	1,511	617	626	1,206	885	22.7	31	20.5	16.0	23	15.2	620	566
Verdun, c.....	1,791	1,511	617	626	1,206	885	22.7	31	20.5	16.0	23	15.2	620	566
Westmount, c.....	252	207	275	228	-23	-21	23.0	7	33.8	16.7	5	24.2	379	314
<b>Ontario—</b>														
Barrie, c.....	572	522	158	204	414	318	28.3	10	19.2	21.0	8	15.3	197	222
Belleville, c.....	645	742	229	273	416	469	23.3	19	25.6	17.1	17	22.9	246	260
Brantford, c.....	1,213	1,218	498	565	715	653	23.0	28	23.0	16.3	20	16.4	464	532
Burlington, t.....	719	1,271	149	284	570	987	15.6	24	18.9	12.0	17	13.4	148	267
Chatham, c.....	649	821	251	318	398	503	27.1	20	24.4	21.9	12	14.6	272	290
Cornwall, c.....	1,162	1,045	310	326	852	719	32.7	27	25.8	16.8	21	20.1	361	395
Eastview, t.....	955	119	136	136	856	819	22.1	23	24.1	10.2	18	18.8	167	177
Forest Hill, v.....	234	277	151	195	83	82	16.2	—	—	—	—	—	18	9
Fort William, c.....	1,063	969	343	388	720	581	23.7	13	13.4	18.6	10	10.3	384	357
Galt, c.....	594	740	235	262	359	478	18.9	16	18.0	14.1	7	9.5	221	265
Guelph, c.....	1,057	1,057	332	335	655	722	24.1	19	18.6	17.8	17	16.1	343	366
Hamilton, c.....	6,544	6,465	2,240	2,391	4,304	4,074	21.4	132	20.4	15.2	99	15.3	2,413	2,346
Kingston, c.....	1,358	1,393	487	469	871	924	25.0	37	26.6	17.5	29	20.8	485	542
Kitchener, c.....	1,783	2,129	513	565	1,270	1,564	20.8	43	20.2	16.8	39	18.3	581	686
London, c.....	2,573	4,095	1,090	1,408	1,483	2,687	27.7	86	21.0	19.0	68	16.6	1,246	1,376
Niagara Falls, c.....	1,296	1,110	400	420	896	690	23.4	23	20.7	17.7	21	18.9	465	415
North Bay, c.....	723	596	188	200	535	396	23.8	12	20.1	14.9	10	16.8	280	285
Oakville, c.....	263	1,092	80	217	183	875	23.5	31	28.4	18.2	27	24.7	128	281
Oshawa, c.....	1,592	1,883	361	484	1,231	1,399	24.4	41	25.2	18.3	40	21.2	471	590
Ottawa, c.....	5,938	5,992	2,170	2,555	3,768	3,737	24.6	151	25.2	17.7	102	17.0	2,139	2,223
Peterborough, c.....	1,138	1,008	414	441	724	567	26.0	12	11.9	20.4	11	10.9	399	389
Port Arthur, c.....	1,054	899	394	470	660	429	23.3	18	20.0	16.1	13	14.5	390	406
St. Catharines, c.....	2,091	1,966	640	701	1,451	1,265	22.3	29	14.8	18.1	26	13.2	638	732
St. Thomas, c.....	2,428	467	244	266	1,184	201	21.0	6	12.8	15.9	4	8.6	203	258
Sarnia, c.....	1,406	1,075	339	370	1,067	705	22.9	24	22.3	17.1	19	17.7	353	390
Sault Ste. Marie, c.....	1,163	1,129	309	317	854	812	21.8	21	18.6	15.5	17	15.1	511	550
Strafford, c.....	437	437	231	232	207	205	18.7	7	16.0	14.1	5	11.4	166	185
Sudbury, c.....	1,821	2,126	363	523	1,458	1,603	27.6	46	21.6	20.5	34	16.0	684	653
Timmins, t.....	801	753	232	241	569	512	34.5	15	19.9	22.8	12	15.9	240	226
Toronto, c.....	15,953	14,951	7,386	6,870	8,567	8,081	23.0	354	23.7	17.3	259	17.3	11,590	10,590
Waterloo, c.....	492	564	133	161	359	403	23.2	10	17.7	16.3	8	14.2	126	181
Welland, c.....	390	803	161	293	239	510	22.5	16	19.9	20.4	14	17.4	268	329
Windsor, c.....	2,825	2,480	1,158	1,325	1,667	1,155	26.9	68	27.4	15.5	50	20.2	1,319	1,301
Woodstock, c.....	487	454	188	213	299	241	22.6	10	22.0	15.2	7	15.4	175	215

For footnotes, see end of table, p. 240.

2.—Summary of Principal Vital Statistics for Incorporated Urban Centres of 20,000 Population or Over,<sup>1</sup> 1964 with Average for 1956-60—concluded

Province and Urban Centre	Live Births		Deaths		Natural Increase <sup>2</sup>		Infant Mortality <sup>3</sup>		Neonatal Mortality <sup>4</sup>		Marriages <sup>5</sup>	
	Av. 1956-60	1964	Av. 1956-60	1964	Av. 1956-60	1964	Av. 1956-60	1964	Av. 1956-60	1964	Av. 1956-60	1964
	No.	No.	No.	No.	No.	No.	Rate <sup>6</sup>	Rate <sup>6</sup>	Rate <sup>6</sup>	Rate <sup>6</sup>	No.	No.
<b>Manitoba—</b>												
Brandon, c.....	680	639	228	307	452	332	22.1	12	18.8	16.8	248	235
Kildonan East, c.....	600	527	126	160	474	367	21.3	8	15.2	16.7	106	175
Kildonan West, c.....	386	328	99	134	287	194	13.0	6	18.3	10.4	50	90
St. Boniface, c.....	962	1,026	305	301	657	725	23.3	15	14.6	16.6	280	216
St. James, c.....	715	601	210	231	505	370	21.7	9	15.0	16.4	214	217
St. Vital, c.....	618	651	156	173	462	478	23.1	14	21.5	16.2	110	138
Winnipeg, c.....	6,169	5,588	2,633	2,644	3,536	2,944	26.2	130	23.3	19.5	2,847	2,589
<b>Saskatchewan—</b>												
Moose Jaw, c.....	909	757	323	333	586	424	20.7	17	22.5	15.8	296	294
Prince Albert, c.....	642	699	173	167	469	532	29.6	15	21.5	20.6	273	250
Regina, c.....	2,922	3,329	681	908	2,241	2,421	23.3	75	22.5	17.5	1,004	1,062
Saskatoon, c.....	2,504	2,684	650	760	1,854	1,924	20.8	59	22.0	16.2	876	963
<b>Alberta—</b>												
Calgary, c.....	6,937	7,651	1,569	2,088	5,368	5,563	22.4	178	23.3	16.4	2,205	2,470
Edmonton, c.....	8,807	8,397	1,670	1,884	7,137	6,513	22.3	178	21.2	16.3	3,136	3,136
Jasper Place, t.....	899	1,147	77	142	822	1,005	17.6	22	19.2	12.5	21	49
Lethbridge, c.....	897	768	249	287	648	481	21.9	19	24.7	18.3	382	367
Medicine Hat, c.....	586	541	211	255	375	286	22.9	9	16.6	14.7	271	265
<b>British Columbia—</b>												
Burnaby, d.m.....	2,477	1,974	719	821	1,758	1,153	20.1	47	23.8	14.4	498	552
Coquitlam, d.m.....	642	742	110	168	574	574	19.6	12	16.2	14.0	59	120
New Westminster, c.....	640	549	326	374	314	175	17.8	12	23.7	12.5	551	442
North Vancouver, c.....	626	541	195	237	431	304	20.4	19	16.6	14.0	160	148
North Vancouver, d.m.....	920	864	188	240	732	624	17.0	12	13.9	10.4	94	106
Richmond, d.m.....	1,055	1,013	178	262	877	751	18.4	12	20.7	12.5	116	185
Saanich, d.m.....	1,026	1,013	384	434	642	570	18.5	17	16.8	13.6	110	222
Surrey, d.m.....	1,709	1,665	455	599	1,254	966	18.4	27	16.2	13.0	130	276
Vancouver, c.....	8,211	6,408	4,890	4,921	3,621	1,487	21.6	101	17.2	13.1	4,868	3,825
Victoria, c.....	1,236	933	352	945	884	422	23.8	24	25.7	16.2	698	699
West Vancouver, d.m.....	1,404	386	183	212	221	174	22.8	3	7.8	16.3	121	204

<sup>1</sup> As at the date of the 1961 Census; residents only.

<sup>2</sup> Excess of births over deaths.

<sup>3</sup> Deaths under one year of age.

<sup>4</sup> Deaths under 28 days.

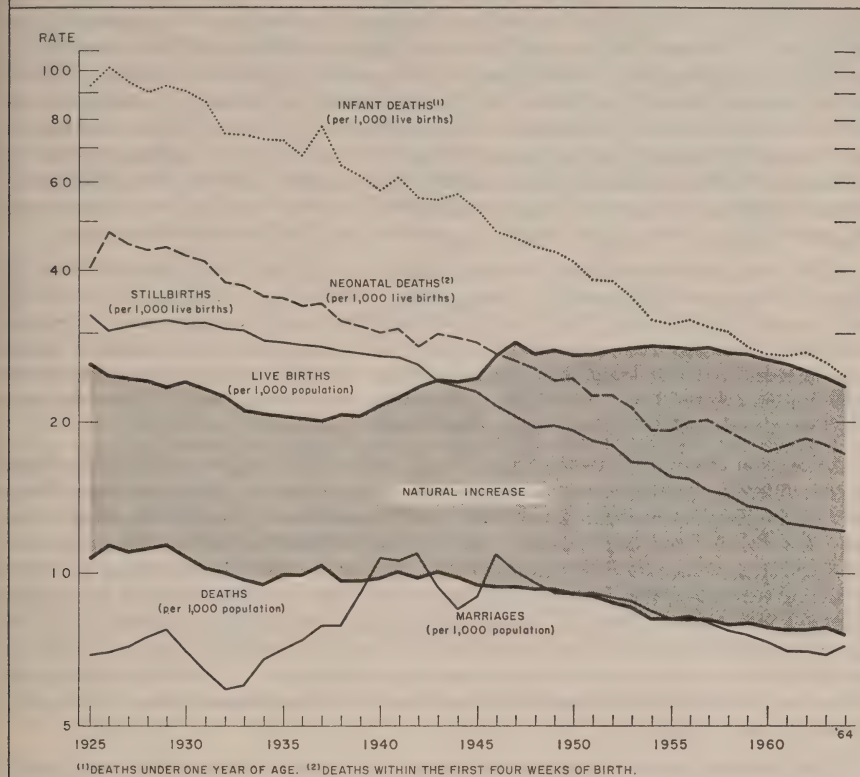
<sup>5</sup> By place of occurrence.

<sup>6</sup> Per 1,000 live births.

<sup>7</sup> Population fewer than 20,000 at date of 1961 Census but included as the largest urban centre in Prince Edward Island.



## VITAL STATISTICS RATES, 1925-64



## Section 2.—Births\*

No accurate figures on Canadian crude† birth rates are available prior to 1921, when the annual collection of official national figures was initiated. However, the following rough estimates of the average annual crude rates for each ten-year intercensal period between 1851 and 1921 may be inferred from studies of early Canadian census data:—

Intercensal Period	Estimated Average Annual Crude Birth Rate (per 1,000 Population)
-----------------------	---

1851-61.....	45
1861-71.....	40
1871-81.....	37
1881-91.....	34

Intercensal Period	Estimated Average Annual Crude Birth Rate (per 1,000 Population)
-----------------------	---

1891-1901.....	30
1901-11.....	31
1911-21.....	29

\* Unless otherwise indicated, "births" in this Section refer to infants born alive; stillbirths are dealt with under a separate heading on p. 249 and under multiple births on p. 244. For international comparisons, see Section 7, pp. 275-276.

† A crude rate is one based on the total population.

The general trend in the national birth rate since 1925 is shown in the chart on p. 241 and since 1941 in Table 1. The annual rates declined gradually but steadily from 29.3 in 1921 to a record low of 20.1 in 1937, recovered sharply in the late 1930's and during World War II to 24.3 in 1945, and in the two years following the War rose to a postwar high of 28.9 in 1947. Between 1948 and 1959 the rate remained remarkably stable at between 27.1 and 28.5 but has since been declining and in 1964 reached a postwar low of 23.5. Part of this decline is attributable to the fact that the crude birth rate is based on *total* population, which now includes larger proportions of 'non-productive' population, as well as to the fact that the large, immediate postwar cohorts of married women are now approaching the end of their reproductive periods and have completed their families. Further, even if the annual number of births were to remain stable at 450,000 to 500,000—as it has for the past five to ten years—the net effect of an increase in population is a declining crude birth rate.

The rates in most provinces followed trends very similar to the national trend but showed some regional differences in recent years. Although all provinces had record high rates immediately following World War II, average birth rates in Ontario and the western provinces were higher during the 1951-55 period than during 1946-50 and those for Quebec and the Maritimes were lower than during 1946-50. In fact, Ontario, Alberta and British Columbia had record high crude birth rates during the 1956-59 period. However, most of the provinces recorded their lowest postwar rate in 1964.

It is often erroneously assumed that the Province of Quebec has not only the largest number of births annually but the highest birth rate in Canada. Since the late 1930s or early 1940s Newfoundland, in some years New Brunswick and, since 1953, Alberta have had higher birth rates than Quebec. Table 1, pp. 236-237, shows that six provinces—Newfoundland, Prince Edward Island, Alberta, New Brunswick, Saskatchewan and Nova Scotia, in that order, had higher crude rates than Quebec in 1964, followed by Ontario, Manitoba and British Columbia. However, since these crude rates are based on the *total* population they do not reflect the fertility of the women of reproductive ages in the different provinces or the number married within these reproductive ages. A more accurate measure of the true birth rate is one based on the number of married women between the ages of 15 and 45 (see pp. 245-246).

Also contrary to popular impression, since 1953 more babies were born each year in Ontario than in the Province of Quebec; in 1964, 152,729 babies were born to Ontario mothers as compared with 130,845 to Quebec mothers. Altogether, 452,915 children were born alive in Canada in 1964, 26,360 fewer than the record 479,275 born in 1959 and 12,852 fewer than the number born during 1963.

**Sex of Live Births.**—With rare exceptions, wherever birth statistics have been collected they have shown an excess of male over female births. No conclusive explanation of this excess has yet been given. Nevertheless it is so much an accepted statistical fact that a proper ratio of male to female births has become one of the criteria of complete registration. The number of males to every 1,000 females born in Canada has averaged around 1,057 since the middle 1930s. Provincial sex ratios vary much more widely because of the relatively small number of births involved—the smaller the total number of births, the greater the chance of wide sex-ratio variations from year to year. Another commonly acknowledged fact in many countries—although there is no generally accepted explanation for it—is that the male ratio appears to rise during or shortly after major wars. This seems to have happened in Canada between 1942 and 1945 when the ratio rose to an average of 1,064 during these four years as compared with averages of 1,054 between 1931-41 and 1,057 since 1946. In 1964, 1,056 male infants were born for every 1,000 females.

## 3.—Sex Ratios of Live Births, 1941-64

NOTE.—Figures for Newfoundland are included from 1949 and those for the Yukon and Northwest Territories from 1950.

Year	Males	Females	Males to 1,000 Females	Year	Males	Females	Males to 1,000 Females
	No.	No.	No.		No.	No.	No.
1941.....	131,175	124,142	1,057	1958.....	241,675	228,443	1,058
1951.....	195,918	185,174	1,058	1959.....	246,073	233,202	1,055
1952.....	208,070	195,489	1,064	1960.....	246,029	232,522	1,058
1953.....	214,423	203,461	1,054	1961.....	244,403	231,297	1,057
1954.....	224,168	212,030	1,057	1962.....	240,870	228,823	1,053
1955.....	227,382	215,555	1,055	1963.....	238,865	226,902	1,053
1956.....	231,697	219,042	1,058	1964.....	232,657	220,258	1,056
1957.....	241,073	228,020	1,057				

**Hospitalized Births.**—In 1964 over 98 p.c. of all Canadian births occurred in hospital as compared with 88 p.c. eight years previously. Table 4 shows the rise in hospitalized births in each province since 1941. Before the initiation in 1958 of the federal-provincial hospital insurance programs—in which all provinces were participating by 1961—there were rather wide variations among the provinces in percentages of hospitalized births. Such variations were caused by the existence of prepaid or provincially sponsored hospital, maternity or medical care plans in some provinces, the unavailability of hospital facilities in others—particularly in remote rural areas—and preference for home delivery in some local areas. Although some variation still exists, the operation of the hospital insurance program has probably been responsible for the noticeable increases in hospitalized births in provinces that previously had lower proportions, for example in New Brunswick where the hospital insurance plan was put into effect on July 1, 1959, and in Quebec where the plan went into effect in 1961.

## 4.—Percentages of Live Births Hospitalized, by Province, 1941-64

Year	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada <sup>1</sup>
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1941....	32.7	50.4	30.8	17.6	67.5	73.6	63.2	77.1	87.3	..	..	48.9
1951....	88.3	87.2	70.7	53.0	93.1	93.1	95.2	93.6	97.3	87.4	32.8	79.1
1956....	95.2	93.9	84.7	71.2	97.3	95.8	97.6	96.6	98.3	87.7	44.6	88.4
1957....	96.7	95.1	86.8	75.6	97.9	96.4	98.3	97.5	98.5	91.3	38.6	90.2
1958....	99.0	96.2	88.5	79.3	98.0	96.8	98.5	97.7	98.5	92.6	42.1	91.7
1959....	99.2	98.0	93.5	82.3	98.6	97.4	98.5	98.0	98.6	88.6	45.7	93.1
1960....	99.4	98.6	97.7	85.2	99.0	98.0	99.0	98.5	98.8	93.3	51.7	94.6
1961....	99.3	98.9	99.0	92.3	99.3	98.2	98.8	98.6	98.9	92.8	57.1	96.9
1962....	99.6	99.2	99.4	95.0	99.4	98.5	98.8	98.7	98.9	95.4	55.9	97.8
1963....	99.8	99.3	99.4	96.5	99.6	98.2	99.1	98.9	99.1	93.0	64.3	98.3
1964....	99.5	99.4	99.7	97.6	99.6	98.7	98.9	99.0	99.0	94.4	61.3	98.7

<sup>1</sup> Excludes Newfoundland for which data are not available.



**Births in Urban Centres.**—Table 2, pp. 238-240, shows the number of births in 1964, as compared with the average for 1956-60, to mothers residing in each urban centre of 20,000 population or over. Because the populations of urban centres are not known for intercensal years, birth rates cannot be computed for the 1956-60 period or for 1962-64.

**Illegitimacy.\***—In 1964, nearly 6 p.c. of the live births in Canada were illegitimate. This percentage is low compared with that of many countries of the world but has been rising recently, as shown in Table 5.

**5.—Illegitimate Live Births and Percentages of Total Live Births, by Province, 1941-64**

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada <sup>1</sup>
ILLEGITIMATE LIVE BIRTHS													
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Av. 1941-45	406	107	1,074	591	3,003	3,751	597	673	852	889	..	..	11,536
" 1946-50	441	152	1,244	754	3,382	4,256	766	914	1,202	1,516	..	..	14,375
" 1951-55	426	139	1,082	659	4,086	4,065	969	1,044	1,481	1,898	53	50	15,951
" 1956-60	587	139	1,201	687	4,675	4,891	1,166	1,194	1,941	2,505	72	102	19,160
1962.....	625	133	1,394	739	5,195	5,813	1,558	1,384	2,572	2,804	91	135	22,443
1963.....	761	131	1,455	812	5,644	6,351	1,683	1,580	2,741	3,079	78	143	24,458
1964.....	753	114	1,481	887	5,981	7,188	1,846	1,671	2,991	3,393	90	161	26,556
PERCENTAGES OF TOTAL LIVE BIRTHS													
Av. 1941-45	4.4	4.9	7.1	4.5	3.1	4.8	3.8	3.6	4.5	5.0	..	..	4.2
" 1946-50	3.6	5.3	6.9	4.5	2.9	4.0	4.0	4.2	4.9	5.9	..	..	4.1
" 1951-55	3.2	5.1	5.9	4.0	3.2	3.2	4.5	4.4	4.8	6.1	12.9	7.5	3.8
" 1956-60	3.9	5.2	6.3	4.1	3.3	3.2	5.2	5.0	5.3	6.4	14.2	10.8	4.1
1962.....	4.1	4.7	7.2	4.5	3.8	3.7	6.8	5.9	6.6	7.4	16.6	11.9	4.8
1963.....	4.9	4.4	7.7	5.1	4.2	4.1	7.4	6.7	7.1	8.2	15.6	12.3	5.3
1964.....	5.1	4.2	8.1	5.8	4.6	4.7	8.5	7.4	8.3	9.5	17.5	12.7	5.9

<sup>1</sup> Figures for Newfoundland are included from 1949, and those for the Yukon and Northwest Territories from 1951.

**Multiple Births.**—Approximately one confinement in 90 in Canada results in the birth of more than one child as compared with one in 85 several years ago—in other words, the chances of a confinement resulting in the birth of more than one child are fewer now than formerly. The chance of a mother delivering twins is about one in 90, triplets, one in about 10,000 and quadruplets, one in about 750,000 or more. Two sets of quadruplets were born in Canada during 1960—the first since 1957—and one set in each of 1962, 1963 and 1964. In 1964 a total of 453,614 mothers bore a total of 458,464 infants, of which 452,915, or almost 99 out of every 100, were born alive.

Other facts illustrated by Table 6 are that the proportion of stillbirths is higher among multiple than among single births, about twice as high for twins and between three and five times as high for triplets.

\* The term "illegitimate", as used here, does not refer to all births conceived out of wedlock but is necessarily restricted to those in which parents reported themselves as not having been married to each other at the time of birth or registration and, in Ontario, to those in which the marital status of the mother was reported as "single" at the time of birth or registration.

6.—Single and Multiple Births, Live and Stillborn,<sup>1</sup> 1962-64

Confinements and Births	Numbers			Percentages		
	1962 <sup>2</sup>	1963 <sup>3</sup>	1964 <sup>4</sup>	1962	1963	1964
<b>Confinements</b> .....	<b>470,345</b>	<b>466,537</b>	<b>453,614</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Single.....	465,136	461,569	448,814	98.9	98.9	98.9
Twin.....	5,159	4,930	4,751	1.1	1.1	1.0
Triplet.....	49	37	48	--	--	--
Quadruplet.....	1	1	1	--	--	--
<b>Births</b> .....	<b>475,605</b>	<b>471,544</b>	<b>458,464</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Single—						
Live.....	459,539	456,109	443,602	98.8	98.8	98.8
Stillborn.....	5,597	5,460	5,212	1.2	1.2	1.2
Twin—						
Live.....	10,006	9,553	9,174	97.0	96.9	96.5
Stillborn.....	312	307	328	3.0	3.1	3.5
Triplet—						
Live.....	144	104	136	98.0	93.7	94.4
Stillborn.....	3	7	8	2.0	6.3	5.6
Quadruplet—						
Live.....	4	1	3	100.0	25.0	75.0
Stillborn.....	—	3	1	—	75.0	25.0
<b>Totals, Live Births</b> .....	<b>469,693</b>	<b>465,767</b>	<b>452,915</b>	<b>98.8</b>	<b>98.8</b>	<b>98.8</b>
<b>Totals, Stillborn</b> .....	<b>5,912</b>	<b>5,777</b>	<b>5,549</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>

<sup>1</sup> Unless otherwise indicated, includes only foetuses of 28 or more full weeks gestation.

<sup>2</sup> Includes 30 stillbirths of 20-27 weeks gestation.

<sup>3</sup> Includes 45 stillbirths of 20-27 weeks gestation.

<sup>4</sup> Includes 29 stillbirths of 20-27 weeks gestation.

**Fertility Rates.**—The sex and age composition of a population is obviously an important factor in determining crude birth, marriage and death rates. Since almost all children born each year are to women between the ages of 15 and 45, variations in the proportion of women of these ages to the total population will cause variations in the crude birth rate of different countries—or of different regions within a country—even though the actual rates of reproduction or *fertility* of the women in these age groups in each country or region are identical.

A more accurate measure of the fertility of a population would be one based on the number of women of reproductive age, that is those 'able' to bear children, and a still more accurate measure would be one based on the number within this group that are married, that is those 'eligible', as it were, to bear children. Each type of rate has its uses, depending on the comparisons required. The two types—generally referred to as *crude fertility rates*—are compared in Table 7, and indicate the variations in each type as between provinces and the provincial trends over the years 1962-64.

The number of infants born in relation to every 1,000 women in the population between the ages of 15 and 45 has been declining for the past few years, dropping from 124 in 1962 to 115 in 1964. However, the rates varied among the provinces from 104 to 171 during the past three years; in 1964 Newfoundland, Prince Edward Island, Saskatchewan, New Brunswick, Alberta and Nova Scotia had the highest rates and British Columbia, Quebec, Ontario and Manitoba, in that order, the lowest. On the other hand, the average annual

number of infants born to every 1,000 *married* women in the country as a whole dropped from 176 to 165 during the same period. According to this measure, the five eastern provinces and Saskatchewan had, on the whole, the highest rates.

### 7.—Crude Fertility Rates, by Province, 1962-64

Province or Territory	Rates per 1,000 Total Women 15-44 Years of Age <sup>1</sup>			Rates per 1,000 Married Women 15-44 Years of Age <sup>1</sup>		
	1962	1963	1964	1962	1963	1964
Newfoundland.....	171.4	169.9	156.7	262.1	262.2	246.5
Prince Edward Island.....	150.0	155.2	142.0	228.4	245.0	229.2
Nova Scotia.....	134.5	129.4	124.7	191.1	185.0	180.4
New Brunswick.....	142.2	134.0	128.9	213.4	203.2	198.0
Quebec.....	117.3	113.6	109.0	187.6	182.5	175.6
Ontario.....	120.7	118.3	113.7	161.6	159.3	153.6
Manitoba.....	124.7	121.9	115.8	170.3	167.2	158.1
Saskatchewan.....	133.3	135.4	129.4	183.4	187.7	180.8
Alberta.....	140.0	135.9	125.9	181.5	176.7	163.4
British Columbia.....	117.6	113.1	104.7	153.1	147.8	136.9
Yukon Territory.....	182.3	172.1	165.8	..	..	..
Northwest Territories.....	252.0	263.9	275.2	..	..	..
<b>Canada<sup>2</sup>.....</b>	<b>124.1</b>	<b>121.0</b>	<b>115.2</b>	<b>176.1</b>	<b>172.6</b>	<b>165.0</b>

<sup>1</sup> Since the number of births to women over 44 is quite small, rates are here restricted to women under 45.

<sup>2</sup> Excludes the Yukon and Northwest Territories.

The rates shown in Table 7 are *crude* in the sense that they do not take into account differences in fertility in the component age periods within the female reproductive life span, nor the proportions of married women in each age period. It is therefore conventional practice to calculate what are termed *age-specific fertility rates*, i.e., the number of infants born annually to every 1,000 women in *each* of the reproductive age periods, again either for all women or for those who are married. Table 8 provides these two sets of rates—the former for 1941, 1951 and 1956-64 and the latter for 1962-64 in addition to the census years from 1941 to 1961.

Another measure of fertility in a country is obtainable from what is conventionally referred to as a *gross reproduction rate*. The gross reproduction rates shown in Table 8 indicate the average number of female children born each year to each woman living through the child-bearing ages. In other words, this figure represents the average number of females that *would* be born to each woman who lived to age 50 *if* the fertility rate of the given year remained unchanged during the whole of her child-bearing period. A gross reproduction rate of 1.000 indicates that, on the basis of current fertility and without making any allowance for mortality among mothers during their child-bearing years, the present generation of child-bearing women would exactly maintain itself. Canada has always had one of the highest gross reproduction rates among the industrialized countries of the world. Even during the period of low birth rates in the 1930s the rate varied between 1.300 and 1.500 and since World War II has ranged from 1.640 to a record high of 1.915 in 1959; in 1964 the rate stood at 1.720, still 72 p.c. more than the number required for the population to replace itself. With minor exceptions, provincial reproduction rates are also well above the replacement level.



Table 8 indicates that in 1964, considering all women whether married or not, women in their 20s were the most reproductive, as might be expected; on the average, for every 1,000 women between the ages of 20 and 25, 216 infants were born during that year or, expressed another way, about one woman out of four in that age group gave birth to a live-born infant. This compares with a rate of 206 for women in the age group 25-29, which is closer to one in five. However, among *married* women, teen-age mothers have consistently had the highest fertility, with one out of two bearing a child each year on the average, while about 34 out of every 100 married women in their early 20s had a child every year as compared with about one in four women in their late 20s.

#### 8.—Age-Specific Fertility Rates per 1,000 Women, by Age Group, 1941-64

(Exclusive of Newfoundland for all years and the Yukon and Northwest Territories for 1941)

Year	Age Group							Gross Reproduction Rate
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
TOTAL WOMEN								
1941.....	30.7	138.4	159.8	122.3	80.0	31.6	3.7	1.377
1951.....	48.1	188.7	198.8	144.5	86.5	30.9	3.1	1.701
1956.....	55.9	222.2	220.1	150.3	89.6	30.8	2.9	1.874
1957.....	60.2	227.1	224.1	149.4	90.7	30.7	2.8	1.907
1958.....	59.2	226.5	223.3	147.9	87.6	28.9	2.7	1.886
1959.....	60.4	233.8	226.7	147.7	87.3	28.5	2.7	1.915
1960.....	59.8	233.5	224.4	146.2	84.2	28.5	2.4	1.893
1961.....	58.2	233.6	219.2	144.9	81.1	28.5	2.4	1.868
1962.....	55.3	232.4	215.6	143.4	77.0	27.5	2.1	1.836
1963.....	53.5	228.2	212.5	140.9	75.7	25.9	2.1	1.800
1964.....	50.6	216.2	206.0	136.0	72.1	25.0	2.1	1.720
MARRIED WOMEN								
1941.....	453.1	340.2	237.8	158.3	99.1	38.9	4.5	...
1951.....	498.5	350.4	248.1	168.7	100.6	36.6	3.7	...
1956.....	551.5	381.7	265.5	169.8	101.0	35.6	3.4	...
1961.....	541.2	374.4	255.6	161.4	89.9	32.1	2.8	...
1962.....	544.7	367.8	253.2	159.1	84.9	30.8	2.5	...
1963.....	547.4	356.8	251.9	155.8	83.1	28.8	2.4	...
1964.....	473.0	344.2	243.8	149.8	78.6	27.6	2.4	...

**Age of Parents.**—Age of parents is an important variable in any analysis of birth statistics. The distribution of legitimate and illegitimate live births by age of the parents is given in Table 9.

Over 7 p.c. of the legitimate children born in 1964 were born to mothers under 20 years of age, in over one third of the births the mother was under 25 years, and in two thirds, under 30 years; in almost one fifth of the births the father was under 25 years of age, and in over 49 p.c. of all births the father was under 30 years. On the other hand, almost 38 p.c. of the illegitimate infants born were born to mothers under 20 years of age and an additional 34 p.c. to mothers under 25 years. The average age of all the married mothers to whom a child was born in 1964 was 27.9, and of the fathers 31.1 years; ten years ago the average ages of the parents were 28.4 and 31.9, and thirty years ago 29.3 and 33.7, respectively.

The median age of unmarried mothers who bore a live-born child in 1964 was 21.2; that is, half of the mothers of the 25,803 'illegitimate' children delivered in 1964 were under 21.3 years of age.

## 9.—Live Births, by Age of Parents, 1964

(Exclusive of Newfoundland)

Age Group	Legitimate				Illegitimate	
	Fathers		Mothers		Mothers	
	No.	p.c.	No.	p.c.	No.	p.c.
Under 20 years.....	4,717	1.1	30,781	7.5	9,786	38.8
Under 15 years.....	—	—	27	—	182	0.7
15 years.....	—	—	265	0.1	531	2.1
16 ".....	23	—	1,533	0.4	1,341	5.3
17 ".....	270	0.1	4,980	1.2	2,333	9.2
18 ".....	1,173	0.3	9,224	2.2	2,743	10.9
19 ".....	3,251	0.8	14,752	3.6	2,656	10.5
20-24 ".....	76,833	18.7	128,368	31.1	8,759	34.7
25-29 ".....	120,757	29.3	114,715	27.8	3,397	13.5
30-34 ".....	100,917	24.5	78,778	19.1	1,880	7.4
35-39 ".....	62,723	15.2	44,079	10.7	1,018	4.0
40-44 ".....	30,522	7.4	14,578	3.5	364	1.4
45-49 ".....	10,761	2.6	1,044	0.3	32	0.1
50 years or over.....	4,552	1.1	10	—	—	—
<b>Totals, Stated Ages.....</b>	<b>411,782</b>	<b>100.0</b>	<b>412,353</b>	<b>100.0</b>	<b>25,236</b>	<b>100.0</b>
Ages not stated.....	650	...	79	...	567	...
<b>Totals, All Ages.....</b>	<b>412,432</b>	<b>100.0</b>	<b>412,432</b>	<b>100.0</b>	<b>25,803</b>	<b>100.0</b>
Average ages.....yrs.	31.1		27.9		23.4	
Median ages <sup>1</sup> ....."	30.2		26.9		21.2	

<sup>1</sup> The age above and below which half of the births occurred.

**Order of Birth.**—Table 10 shows the order of birth of all live-born infants in 1964 according to the age of the mother. As would be expected, 30,710, or three fourths of the 40,567 infants born to mothers under 20 years of age, were the first live-born child, whereas almost six out of every ten of the children born to mothers of 20-24 years were their second or later live-born child. In 1964, 209 infants were born to mothers who had not yet reached their 15th birthday.

## 10.—Order of Birth of Live-Born Children, by Age of Mother, 1964

(Exclusive of Newfoundland)

Order of Birth of Child	Age of Mother										Percentage of Total
	Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45 or Over	Age Not Stated	All Ages	
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	
1st child.....	207	30,503	58,376	21,223	7,154	2,680	651	37	552	121,383	27.7
2nd ".....	2	8,191	44,475	31,742	12,982	4,772	998	41	34	103,237	23.6
3rd ".....	—	1,462	21,918	28,410	17,471	6,754	1,596	83	12	77,706	17.7
4th ".....	—	177	8,363	17,790	14,884	7,538	1,887	105	12	50,756	11.6
5th ".....	—	15	2,863	9,673	10,443	6,400	2,048	106	6	31,554	7.2
6th ".....	—	1	831	5,065	6,753	4,867	1,562	111	3	19,193	4.4
7th ".....	—	—	223	2,432	4,370	3,497	1,313	92	3	11,930	2.7
8th ".....	—	—	49	1,122	2,778	2,511	1,124	109	4	7,697	1.8
9th ".....	—	—	11	419	1,695	1,878	860	67	—	4,930	1.1
10th ".....	—	—	3	157	1,032	1,385	714	74	—	3,365	0.8
11th ".....	—	—	2	47	602	1,022	577	67	—	2,317	0.5
12th ".....	—	—	—	12	256	766	479	55	—	1,598	0.4
13th ".....	—	—	—	3	127	467	340	38	—	975	0.2
14th ".....	—	—	—	2	49	289	293	36	—	669	0.2
15th ".....	—	—	—	18	150	217	217	23	—	410	0.1
16th ".....	—	—	—	7	62	130	130	15	—	214	—
17th ".....	—	—	—	—	30	73	73	9	—	112	—
18th ".....	—	—	—	—	12	39	39	7	—	58	—
19th ".....	—	—	—	—	7	20	20	7	—	34	—
20th or over.....	—	—	—	—	4	20	20	4	—	28	—
Not stated.....	—	9	13	13	7	6	1	—	20	69	—
<b>Totals.....</b>	<b>209</b>	<b>40,358</b>	<b>137,127</b>	<b>118,112</b>	<b>80,658</b>	<b>45,097</b>	<b>14,942</b>	<b>1,086</b>	<b>646</b>	<b>438,235</b>	<b>100.0</b>

Table 11 summarizes the pattern of family formation since 1941.

# 11.—Percentage Distribution of Legitimate Live Births, by Order of Birth, 1941-64

(Exclusive of Newfoundland)

Year	1st Child	2nd Child	3rd Child	4th and Later Children	Total
1941.....	32.7	21.8	13.5	32.0	100.0
1951.....	26.7	25.8	17.6	29.9	100.0
1956.....	25.2	24.3	18.3	32.2	100.0
1957.....	25.6	23.9	18.3	32.2	100.0
1958.....	25.4	23.8	18.2	32.6	100.0
1959.....	24.8	24.0	18.2	32.9	100.0
1960.....	24.5	23.8	18.5	33.1	100.0
1961.....	24.1	23.6	18.5	33.8	100.0
1962.....	24.0	23.7	18.4	33.9	100.0
1963.....	24.3	23.6	18.5	33.6	100.0
1964.....	25.0	23.8	18.3	32.9	100.0

**Birthweight.**—Excluding Newfoundland, information on birthweight of newborn infants has recently become available from provincial records of birth. These data, in addition to their usefulness in calculating the average weights of newborn infants, are of importance from the public health and medical points of view in throwing light on the number of immaturely developed foetuses that are delivered alive. According to criteria recommended by the World Health Organization, infants of 5 lb. or less at birth are considered 'immature' and hence exposed to a much greater risk of dying than those over this weight. Weight at birth depends on a host of maternal factors, most of which are not included in the birth records, but some information is available on the age of the mother and length of pregnancy before delivery.\* Analysis of this information shows that (1) there are variations in average weight according to the age of the mother, (2) women under 20 and over 35 tend to produce higher proportions of immature infants, so that the late 20s and early 30s would appear to be the ideal ages for motherhood, and (3) almost all infants of less than 28 weeks gestation are delivered 'immature' according to the definition. The average single male infant born at full term weighs about 7½ lb. at birth and the average female about 4 oz. less.

**Stillbirths.**†—The 5,520 stillbirths of at least 28 weeks gestation that were delivered in 1964 represented a ratio of 12.2 for every 1,000 foetuses born alive. As is evident from Table 12, the stillbirth rate has been decreasing steadily and has been cut by more than half over the past quarter-century. Although the variations between provincial rates have never been wide, rates in some provinces have been reduced more than in others. The stillbirth rate among unmarried mothers has been consistently higher than that among married mothers but the difference is narrowing.

\* Obtainable from the Vital Statistics Section, DBS.

† Stillbirth figures given here refer only to foetuses of 28 or more weeks gestation which "showed no sign of life". Up to the end of 1963, only foetuses delivered after at least 28 weeks pregnancy which showed no sign of life were required to be registered with the provincial authorities; as of Jan. 1, 1964, all provinces (except Newfoundland) provide for the compulsory registration of all stillbirths of 20 or more weeks gestation, a 'stillbirth' being defined as "the complete expulsion or extraction from its mother, after at least 20 weeks pregnancy, of a product of conception in which, after such expulsion or extraction, there is no breathing, beating of the heart, pulsation of the umbilical cord, or unmistakable movement of voluntary muscle". Available data for stillbirths of 20-27 weeks pregnancy are not shown here but are obtainable from the Vital Statistics Section, DBS.



## 12.—Stillbirths and Rates per 1,000 Live Births, by Province, 1941-64

Year	Born to All Mothers													Born to Unmarried Mothers <sup>1</sup>	
	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada <sup>2</sup>	No.	P.C. of Total
NUMBERS (28 WEEKS OR MORE GESTATION)															
Av. 1941-45	191	50	388	295	2,786	1,988	345	348	327	309	1	6	6,845	355	5.20
" 1946-50	215	54	358	320	2,898	2,020	349	350	385	352	2	8	7,187	343	4.85
" 1951-55	222	52	337	291	2,705	2,017	336	313	425	374	6	11	7,088	316	4.60
" 1956-60	274	46	304	267	2,446	1,992	301	262	388	418	5	12	6,714	291	4.61
1962.....	249	58	277	238	1,824	1,925	276	248	388	377	3	19	5,882	315	5.59
1963.....	265	52	240	236	1,800	1,873	269	243	367	365	5	17	5,732	323	5.91
1964.....	255	46	260	216	1,644	1,790	285	248	373	373	7	23	5,520	346	6.57
RATES														Rate per 1,000 Illegitimate Live Births <sup>1</sup>	
Av. 1941-45	20.5	22.8	25.6	22.6	28.5	25.6	21.8	18.9	17.4	17.5	11.4	15.7	24.7	30.8	
" 1946-50	17.4	18.9	19.9	19.0	25.1	19.2	18.1	16.0	15.9	13.6	8.7	12.5	20.2	24.2	
" 1951-55	17.0	19.0	18.4	17.7	21.0	15.6	15.7	13.3	13.7	11.9	14.1	16.5	17.0	20.3	
" 1956-60	18.3	17.1	15.9	16.1	17.5	13.0	13.4	10.9	10.5	10.7	10.7	12.3	14.3	15.6	
1962.....	16.5	20.7	14.3	14.5	13.5	12.3	12.0	10.6	10.0	9.9	5.5	16.8	12.5	14.4	
1963.....	17.2	17.6	12.6	15.0	13.5	12.1	11.8	10.3	9.5	9.7	10.0	14.6	12.3	13.6	
1964.....	17.4	16.9	14.2	14.1	12.6	11.7	13.1	10.9	10.3	10.4	13.6	18.2	12.2	13.4	

<sup>1</sup> Exclusive of Newfoundland for all years and the Yukon and Northwest Territories for 1941-50. for Newfoundland are included from 1949.

<sup>2</sup> Figures

Table 13 illustrates the fact that the risk of having a stillborn child increases with the age of the mother. Although stillbirth rates for mothers of all ages have been declining, they continue to be three to four times as high for mothers over 40 years of age as for mothers under 30. The average age of mothers who bore stillborn children in 1964 was 29.9 years; the median age was 29.3. The average age of mothers who bore legitimate live-born children was 27.9 and of those who bore illegitimate live-born offspring was 23.4. Causes of stillbirths in 1964 are shown in Table 14.

## 13.—Stillbirths and Ratios per 1,000 Live Births, by Age of Mother, 1964

(Exclusive of Newfoundland)

Age Group of Mother	Live Births	Stillbirths	Stillbirth Ratio per 1,000 Live Births
	No.	No.	No.
Under 20 years.....	40,567	366	9.0
20—24 ".....	137,127	1,196	8.7
25—29 ".....	118,112	1,234	10.4
30—34 ".....	80,658	1,068	13.2
35—39 ".....	45,097	874	19.4
40—44 ".....	14,942	449	30.0
45—49 ".....	1,076	53	49.3
50 years or over.....	10	—	—
Ages not stated.....	646	25	...
<b>Totals, All Ages.....</b>	<b>438,235</b>	<b>5,265</b>	<b>12.0</b>
Average age of mothers.....yrs.	27.6	29.9	...
Median age of mothers <sup>1</sup> ....."	26.6	29.3	...

<sup>1</sup> The age above and below which half of the stillbirths occurred.

## 14.—Stillbirths, by Cause, 1964

International List No.	Cause	Males	Females	Total
		No.	No.	No.
Y 30	Chronic disease in mother.....	87	61	148
Y 31	Acute disease in mother.....	12	14	26
Y 32	Diseases and conditions of pregnancy and childbirth.....	240	201	441
Y 33	Absorption of toxic substance from mother.....	1	—	1
Y 34	Difficulties in labour.....	132	120	252
Y 35	Other causes in mother.....	41	34	75
Y 36	Placental and cord conditions.....	1,137	958	2,095
Y 37	Birth injury.....	40	25	65
Y 38	Congenital malformation of foetus.....	276	398	674
Y 39	Diseases of foetus and ill-defined causes.....	882	861	1,743
	<b>All Causes.....</b>	<b>2,848</b>	<b>2,672</b>	<b>5,520</b>

## Section 3.—Deaths\*

No official crude† death rates are available prior to 1921, but some indication of these may be obtained from studies of the early censuses as follows:—

<i>Intercensal Period</i>	<i>Estimated Average Annual Crude Death Rate (per 1,000 Population)</i>	<i>Intercensal Period</i>	<i>Estimated Average Annual Crude Death Rate (per 1,000 Population)</i>
1851-61.....	22	1891-1901.....	16
1861-71.....	21	1901-11.....	13
1871-81.....	19	1911-21.....	13
1881-91.....	18		

As is typical of pioneer populations, Canada had a high death rate in the mid-1850s when the country was still in the throes of pioneer settlement. The crude death rate during that period is estimated as between 22 and 25. Although no data are available, it is assumed that, while mortality at all ages was high, the rate among infants, children and young adults must have been particularly so since even in the 1920s mortality in these ages was still quite high. With the gradual increase in population density and in urbanization and improved sanitation and medical services, the crude rate was halved during the 80 years between 1851 and 1930, dropping from about 22 to 11. It declined steadily to slightly over 8 in the late 1950s and dropped to a low of 7.6 in 1964. This is one of the lowest crude death rates in the world.

Table 1, pp. 236-237, shows the trends since 1941 in the provinces and territories. The generally low rates in the Prairie Provinces are partly the result of their younger average population; the uniformly higher rate in British Columbia is attributable mainly to a high proportion of people in the older age groups.

## Subsection 1.—General Mortality

**Age and Sex Distribution of Deaths.**—During the period of national vital statistics (1921 to date), the mortality pattern at all ages has been steeply downward. Of major significance in lowering the over-all death rate were the reductions in infant mortality, in childhood death rates and in those of young adults. In 1931, over 19 p.c. of all male deaths occurred among persons of five to 45 years of age; in 1964 only a little over 10 p.c. took place in this age group. Among females in the same age group the proportion dropped from just under 22 p.c. to 7.4 p.c.

\* For international comparisons, see Section 7, pp. 275-276.

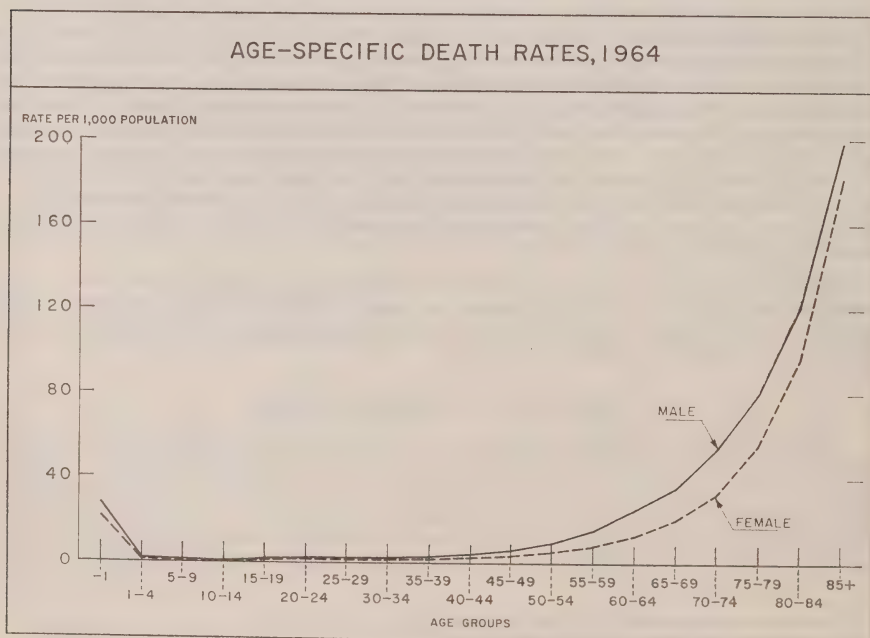
† A crude rate is one based on the total population.

Tables 15 and 16 illustrate the very large reductions in death rates that have taken place since 1931 in each age group of the population. By far the greatest reductions have been among the young of both sexes. However, even though the rates for females at every age have always been consistently lower than those for males, female death rates have been declining faster and the differences are gradually widening. Between 1931 and 1964 the rates for all females dropped by 34 p.c. as compared with only 16 p.c. for males.

15.—Percentage Change in Death Rates for Each Age Group, 1931 to 1964

Age Group	Males	Females	Age Group	Males	Females
Under 1 year.....	-70.6	-71.2	50-54 years.....	-11.2	-43.3
1-4 years.....	-83.8	-85.2	55-59 ".....	-2.6	-42.5
5-9 ".....	-72.7	-76.5	60-64 ".....	+ 9.2	-38.2
10-14 ".....	-66.7	-80.0	65-69 ".....	+ 0.9	-33.0
15-19 ".....	-52.0	-77.3	70-74 ".....	- 1.6	-33.2
20-24 ".....	-43.7	-81.2	75-79 ".....	- 8.4	-32.8
25-29 ".....	-55.9	-84.2	80-84 ".....	- 9.5	-23.8
30-34 ".....	-51.4	-78.6	85 years or over.....	-12.8	-14.3
35-39 ".....	-47.6	-72.9			
40-44 ".....	-33.3	-60.0			
45-49 ".....	-20.8	-51.5			
			All Ages.....	-16.2	-34.4

Despite the very considerable reduction that has taken place in infant mortality, more deaths still occur in the first year of life than in any other single year. Of the total deaths occurring in 1931, almost one quarter were of children under five years of age and more than three quarters of those were of children under one year of age; of the deaths occurring in 1964, almost 9 p.c. were of children under five years and of those about 86 p.c. were under one year. Most of the reduction took place among children over the age of one month but there was also a notable decrease in all childhood ages up to five years.





The reductions in the mortality rates in early and middle years of life have had the effect of increasing the number of people in the older age groups and raising the average age at death. In 1931 the average age at death of males was 43.1 years and of females 44.8 years; by 1964 this had advanced to 60.8 years and 64.5 years, respectively. On the other hand, the median age increased during the same period from 50.8 to 68.1 for males, and from 52.1 to 72.9 for females. This means that *half* of all the females who died during 1964 were over 73 years of age, while for males half had reached 68 years. Since 1931 the gains in median age were 17.3 years for males and 20.8 for females.

### 16.—Distribution of Deaths by Age and Sex, 1931, 1941, 1951, 1961 and 1964

Age Group	1931 <sup>1</sup>		1941 <sup>1</sup>		1951		1961		1964	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
NUMBERS										
Under 1 year.....	11,667	8,693	8,788	6,448	8,375	6,298	7,447	5,493	6,466	4,703
1—4 years.....	2,844	2,533	1,878	1,566	1,421	1,151	1,154	844	1,066	820
5—9 ".....	1,241	963	888	670	711	466	672	405	715	420
10—14 ".....	821	806	787	536	461	284	527	278	475	290
15—19 ".....	1,311	1,132	1,118	823	721	457	840	322	1,009	416
20—24 ".....	1,502	1,453	1,332	1,039	1,009	549	969	342	1,180	386
25—29 ".....	1,388	1,414	1,317	1,173	988	660	895	418	869	373
30—34 ".....	1,301	1,432	1,211	1,148	1,070	778	1,041	562	1,073	550
35—39 ".....	1,512	1,574	1,497	1,242	1,281	1,015	1,422	880	1,400	807
40—44 ".....	1,888	1,493	1,744	1,464	1,756	1,266	1,916	1,099	2,184	1,231
45—49 ".....	2,314	1,738	2,416	1,817	2,463	1,607	2,993	1,617	3,044	1,679
50—54 ".....	2,855	1,993	3,355	2,227	3,525	2,083	4,242	2,237	4,534	2,366
55—59 ".....	3,057	2,246	4,394	2,851	4,741	2,832	5,494	2,749	5,909	2,942
60—64 ".....	3,583	2,855	5,288	3,483	6,465	3,902	7,028	3,725	7,797	3,988
65—69 ".....	4,249	3,348	6,057	4,412	8,007	5,119	8,545	5,304	8,731	5,268
70—74 ".....	4,867	4,073	6,495	4,981	8,748	6,439	10,582	7,058	10,427	6,985
75—79 ".....	4,368	4,029	6,421	5,461	8,254	6,904	10,970	8,290	11,219	8,729
80—84 ".....	3,206	3,215	5,020	4,906	6,232	6,130	8,635	7,871	9,471	8,545
85 years or over.....	2,555	2,998	3,846	4,540	5,336	6,319	7,337	8,782	8,210	9,573
<b>Totals, All Ages.....</b>	<b>56,529</b>	<b>47,988</b>	<b>63,852</b>	<b>50,787</b>	<b>71,564</b>	<b>54,259</b>	<b>82,709</b>	<b>58,276</b>	<b>85,779</b>	<b>60,071</b>
PERCENTAGES										
Under 1 year.....	20.6	18.1	13.8	12.7	11.7	11.6	9.0	9.4	7.5	7.8
1—4 years.....	5.0	5.3	2.9	3.1	2.0	2.1	1.4	1.4	1.2	1.4
5—9 ".....	2.2	2.0	1.4	1.3	1.0	0.9	0.8	0.7	0.8	0.7
10—14 ".....	1.5	1.7	1.2	1.1	0.6	0.5	0.6	0.5	0.6	0.5
15—19 ".....	2.3	2.4	1.8	1.6	1.0	0.8	1.0	0.6	1.2	0.7
20—24 ".....	2.7	3.0	2.1	2.0	1.4	1.0	1.2	0.6	1.4	0.6
25—29 ".....	2.5	2.9	2.1	2.3	1.4	1.2	1.1	0.7	1.0	0.6
30—34 ".....	2.3	3.0	1.9	2.3	1.5	1.4	1.3	1.0	1.3	0.9
35—39 ".....	2.7	3.3	2.3	2.4	1.8	1.9	1.7	1.5	1.6	1.3
40—44 ".....	3.3	3.1	2.7	2.9	2.5	2.3	2.3	1.9	2.5	2.0
45—49 ".....	4.1	3.6	3.8	3.6	3.4	3.0	3.6	2.8	3.5	2.8
50—54 ".....	5.0	4.2	5.3	4.4	4.9	3.8	5.1	3.8	5.3	3.9
55—59 ".....	5.4	4.7	6.9	5.6	6.6	5.2	6.6	4.7	6.9	4.9
60—64 ".....	6.3	5.9	8.3	6.9	9.0	7.2	8.5	6.4	9.1	6.6
65—69 ".....	7.5	7.0	9.5	8.7	11.2	9.4	10.3	9.1	10.2	8.8
70—74 ".....	8.6	8.5	10.2	9.8	12.2	11.9	12.8	12.1	12.2	11.6
75—79 ".....	7.7	8.4	10.1	10.7	11.5	12.7	13.3	14.2	13.1	14.5
80—84 ".....	5.7	6.7	7.9	9.7	8.7	11.3	10.4	13.5	11.0	14.2
85 years or over.....	4.5	6.2	6.0	8.9	7.5	11.6	8.9	15.1	9.6	15.9
<b>Totals, All Ages.....</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

<sup>1</sup> Excludes the Yukon and Northwest Territories.

## 16.—Distribution of Deaths by Age and Sex, 1931, 1941, 1951, 1961 and 1964—concluded

Age Group	1931 <sup>1</sup>		1941 <sup>1</sup>		1951		1961		1964	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
RATES PER 1,000 POPULATION										
Under 1 year.....	94.4	74.4	67.0	51.9	42.7	34.0	30.5	23.7	27.8	21.4
1—4 years.....	6.8	6.1	4.7	4.0	2.1	1.8	1.3	1.0	1.1	0.9
5—9 “.....	2.2	1.7	1.7	1.3	1.0	0.7	0.6	0.4	0.6	0.4
10—14 “.....	1.5	1.5	1.4	1.0	0.8	0.5	0.6	0.3	0.5	0.3
15—19 “.....	2.5	2.2	2.0	1.5	1.4	0.9	1.2	0.5	1.2	0.5
20—24 “.....	3.2	3.2	2.6	2.0	1.9	1.0	1.7	0.6	1.8	0.6
25—29 “.....	3.4	3.8	2.7	2.5	1.8	1.1	1.5	0.7	1.5	0.6
30—34 “.....	3.5	4.2	2.8	2.8	2.1	1.5	1.6	0.9	1.7	0.9
35—39 “.....	4.2	4.8	3.8	3.4	2.5	2.0	2.3	1.4	2.2	1.3
40—44 “.....	5.4	5.0	5.0	4.5	3.9	3.0	3.4	2.0	3.6	2.0
45—49 “.....	7.2	6.6	7.3	6.0	6.4	4.5	5.8	3.2	5.7	3.2
50—54 “.....	10.7	9.0	10.6	8.1	10.4	6.5	9.6	5.3	9.5	5.1
55—59 “.....	15.4	13.4	16.0	12.3	16.2	10.2	15.2	8.0	15.0	7.7
60—64 “.....	22.9	20.7	24.2	18.5	24.5	16.1	24.0	12.8	25.0	12.8
65—69 “.....	35.2	30.3	37.3	30.4	35.1	24.9	35.7	21.4	35.5	20.3
70—74 “.....	55.0	49.1	58.5	47.0	54.5	41.6	54.0	34.2	54.1	32.8
75—79 “.....	87.4	82.9	95.7	79.7	87.6	73.3	81.8	59.2	80.1	55.7
80—84 “.....	134.1	127.1	147.6	131.2	135.5	120.7	125.1	101.2	121.3	96.9
85 years or over.....	228.1	212.6	241.9	229.3	235.1	212.0	208.9	192.2	198.8	182.3
<b>Totals, All Ages.....</b>	<b>10.5</b>	<b>9.6</b>	<b>10.8</b>	<b>9.1</b>	<b>10.1</b>	<b>7.8</b>	<b>9.0</b>	<b>6.5</b>	<b>8.8</b>	<b>6.3</b>
Average age at death yrs.	43.1	44.8	51.5	53.4	56.3	58.7	59.7	63.1	60.8	64.5
Median age at death <sup>2</sup> “	50.8	52.1	61.2	63.6	65.5	68.8	67.9	72.2	68.1	72.9

<sup>1</sup> Excludes the Yukon and Northwest Territories.

<sup>2</sup> The age above and below which half of the total number of annual deaths occurred.

Table 17 indicates the variations from province to province in average and median ages at death; these, in turn, are dependent in large measure on the age distribution of the population as well as on varying mortality rates at each age. For example, in Newfoundland a high mortality rate among infants and young children reduces the average and median age for that province, but the reverse is the case in British Columbia and several other provinces with older populations.

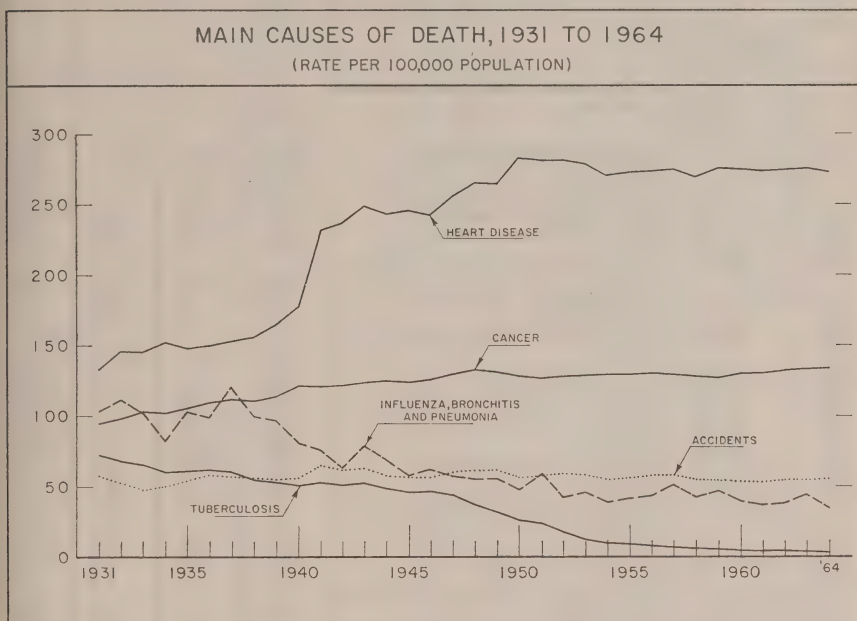
## 17.—Average and Median Ages at Death, by Sex and Province, 1964

Province or Territory	Average Age at Death		Median Age at Death <sup>1</sup>	
	Males	Females	Males	Females
	yrs.	yrs.	yrs.	yrs.
Newfoundland.....	54.5	56.5	64.6	69.0
Prince Edward Island.....	61.4	68.6	71.1	76.3
Nova Scotia.....	62.4	66.2	69.2	74.4
New Brunswick.....	60.6	64.2	69.0	73.7
Quebec.....	56.8	60.8	64.2	69.6
Ontario.....	61.9	67.0	68.0	73.9
Manitoba.....	63.4	65.0	71.1	73.5
Saskatchewan.....	64.1	64.5	72.8	74.0
Alberta.....	60.2	61.2	68.6	71.6
British Columbia.....	65.2	67.8	72.3	75.4
Yukon Territory.....	48.9	31.8	...	...
Northwest Territories.....	23.6	22.6	...	...
<b>Canada.....</b>	<b>60.8</b>	<b>64.5</b>	<b>68.1</b>	<b>72.9</b>

<sup>1</sup> The age above and below which half of the total number of annual deaths occurred.

**Deaths in Urban Centres.**—Table 2, pp. 238-240, shows the numbers of deaths in urban centres of 20,000 population or over in 1964 and the average numbers for the period 1956-60; death rates for urban centres cannot be computed for these years since their populations are not known for intercensal periods.

**Causes of Death.**—Table 18 summarizes the most recent figures for deaths and death rates in Canada grouped according to the International Abbreviated List of 50 Causes. Over 80 p.c. of the deaths are caused by diseases of the heart and arteries, cancer, accidents, diseases of early infancy, the respiratory diseases, and nephritis. Because of the rise in the average age at death during the past thirty years, the proportion of deaths from causes that affect older people has increased. Cancer and diseases of the cardiovascular-renal systems now account for a larger proportion of all deaths. By the same token, deaths from causes that mainly affect children and young adults have declined.



**18.—Deaths and Rates per 100,000 Population, according to the International Abbreviated List of 50 Causes, 1963 and 1964**

International List No.		Cause of Death	Numbers of Deaths		Rates per 100,000 Population	
Abbreviated List	Detailed List		1963	1964	1963	1964
B 1	001-008	Tuberculosis of respiratory system.....	674	598	3.6	3.1
B 2	010-019	Tuberculosis, other forms.....	82	72	0.4	0.4
B 3	020-029	Syphilis and its sequelæ.....	117	91	0.6	0.5
B 4	010	Typhoid fever.....	1	2	--	--
B 5	043	Cholera.....	—	—	—	—
B 6	045-048	Dysentery, all forms.....	5	15	--	0.1
B 7	050, 051	Scarlet fever and streptococcal sore throat.....	5	9	--	--
B 8	055	Diphtheria.....	7	5	--	--
B 9	056	Whooping cough.....	28	26	0.1	0.1
B10	057	Meningococcal infections.....	37	38	0.2	0.2
B11	058	Plague.....	—	—	—	—
B12	080	Acute poliomyelitis.....	16	5	0.1	--
B13	084	Smallpox.....	—	—	—	—
B14	085	Measles.....	73	58	0.4	0.3



**18.—Deaths and Rates per 100,000 Population, according to the International Abbreviated List of 50 Causes, 1963 and 1964—concluded**

International List No.		Cause of Death	Numbers of Deaths		Rates per 100,000 Population	
Abbreviated List	Detailed List		1963	1964	1963	1964
B15	100-103	Typhus and other rickettsial diseases.....	—	1	—	—
B16	110-117	Malaria.....	1	1	—	—
	030-039, 041, 042, 044, 049, 052-054, 059-074, 081-083, 089-096, 120-138, 140-205	All other diseases classified as infective and parasitic.....	363	325	1.9	1.7
B17						
B18		Cancer (all malignant neoplasms).....	25,077	25,637	132.7	133.3
	(201)	Cancer.....	23,637	24,177	125.1	125.7
	(204)	Hodgkin's disease.....	280	276	1.5	1.4
B19	210-239	Leukæmia and aleukæmia.....	1,169	1,184	6.1	6.2
B20	240-249	Benign and unspecified neoplasms.....	355	321	1.9	1.7
B21	250-259	Diabetes mellitus.....	2,302	2,488	12.2	12.9
B22	260-269	Anæmias.....	352	316	1.9	1.6
	330-334	Vascular lesions affecting central nervous system.....	15,410	15,030	81.6	78.1
B23	340	Non-meningococcal meningitis.....	178	179	0.9	0.9
B24	400-402	Rheumatic fever.....	39	42	0.2	0.2
B25	410-416	Chronic rheumatic heart disease.....	1,403	1,323	7.4	6.9
B26	420-422	Arteriosclerotic and degenerative heart disease.....	45,627	46,378	241.5	241.1
B27	430-434	Other diseases of heart.....	2,184	2,219	11.6	11.5
B28	440-443	Hypertension with heart disease.....	2,858	2,656	15.1	13.8
B29	444-447	Hypertension without mention of heart.....	770	806	4.1	4.2
B30	480-483	Influenza.....	1,183	300	6.3	1.6
B31	490-493	Pneumonia.....	5,782	4,962	30.6	25.8
B32	500-502	Bronchitis.....	1,036	1,017	5.6	5.3
B33	540, 541	Ulcer of stomach and duodenum.....	952	992	5.0	5.2
B34	550-553	Appendicitis.....	139	162	0.7	0.8
B35	560, 561, 570	Intestinal obstruction and hernia.....	975	917	5.2	4.8
B36	543, 571, 572	Gastritis, duodenitis, enteritis and colitis except diarrhœa of the newborn.....	916	750	4.8	3.9
B37	581	Cirrhosis of liver.....	1,093	1,228	5.8	6.4
B38	590-594	Nephritis and nephrosis.....	1,369	1,279	7.2	6.6
B39	610	Hyperplasia of prostate.....	512	447	5.4 <sup>1</sup>	4.6 <sup>1</sup>
B40	640-652, 660, 670-689	Complications of pregnancy, childbirth and the puerperium.....	165	137	35.4 <sup>2</sup>	30.2 <sup>2</sup>
B41	750-759	Congenital malformations.....	2,699	2,589	14.3	13.5
B42	760-762	Birth injuries, postnatal asphyxia and atelectasis.....	2,000	2,426	13.8	12.6
B43	763-768	Infections of the newborn.....	477	405	2.5	2.1
B44	769-776	Other diseases peculiar to early infancy and immaturity (unqualified).....	3,963	3,708	21.0	19.3
B45	780-795	Senility without mention of psychosis, ill-defined and unknown causes.....	1,229	1,101	6.5	5.7
B46	Residual	All other diseases.....	12,345	12,393	65.3	64.4
BE47	E810-E835	Motor vehicle accidents.....	4,451	4,862	23.6	25.3
BE48	E800-E802, E810-E962	All other accidents.....	5,804	5,702	30.7	29.6
BE49	E963-E970, E979	Suicide.....	1,436	1,586	7.6	8.2
BE50	E964-E965, E980-E999	Homicide and operations of war.....	247	246	1.3	1.3
<b>Totals, All Causes.....</b>			<b>147,367</b>	<b>145,850</b>	<b>779.9</b>	<b>758.3</b>

<sup>1</sup> Per 100,000 males.<sup>2</sup> Per 100,000 live births.

Accidents have displaced infectious diseases in recent years as one of the major killers. Table 19 shows clearly that accidents are, by far, the leading cause of death among males from age 1 to 45 and one of the five major causes above that age. Although less predominant among females, accidents are also one of the leading causes of female death beyond the first year of life.

## 19.—Leading Causes of Death, by Sex at Various Age Groups, 1964

(Rates per 100,000 population)

Cause	Males		Cause	Females		Cause	Total	
	No.	Rate		No.	Rate		No.	Rate
UNDER 1 YEAR <sup>1</sup>								
Immaturity.....	1,265	544	Congenital malformations.....	947	430	Immaturity.....	2,159	477
Congenital malformations.....	1,022	439	Immaturity.....	894	406	Congenital malformations.....	1,969	435
Influenza, bronchitis, pneumonia.....	785	337	Influenza, bronchitis, pneumonia.....	519	263	Influenza, bronchitis, pneumonia.....	1,364	301
Postnatal asphyxia and aelectasis.....	770	331	Postnatal asphyxia and aelectasis.....	486	221	Postnatal asphyxia and aelectasis.....	1,256	277
Injury at birth.....	698	300	Injury at birth.....	472	214	Injury at birth.....	1,170	258
1-4 YEARS								
Accidents.....	429	46	Accidents.....	203	33	Accidents.....	722	39
Influenza, bronchitis, pneumonia.....	125	13	Influenza, bronchitis, pneumonia.....	114	13	Influenza, bronchitis, pneumonia.....	239	13
Cancer.....	122	13	Congenital malformations.....	92	10	Cancer.....	200	11
Congenital malformations.....	101	11	Cancer.....	78	9	Congenital malformations.....	193	11
Gastritis, duodenitis, enteritis, colitis.....	32	3	Gastritis, duodenitis, enteritis, colitis.....	20	2	Gastritis, duodenitis, enteritis, colitis.....	52	3
5-19 YEARS								
Accidents.....	1,463	49	Accidents.....	517	18	Accidents.....	1,980	34
Cancer.....	232	8	Cancer.....	172	6	Cancer.....	404	7
Congenital malformations.....	89	3	Congenital malformations.....	70	2	Congenital malformations.....	159	3
Suicide.....	58	2	Influenza, bronchitis, pneumonia.....	47	2	Influenza, bronchitis, pneumonia.....	87	1
Influenza, bronchitis, pneumonia.....	40	1	Cardiovascular diseases.....	39	1	Cardiovascular diseases.....	78	1
20-44 YEARS								
Accidents.....	2,792	90	Cancer.....	1,088	35	Accidents.....	3,324	54
Cardiovascular diseases.....	1,430	46	Cardiovascular diseases.....	575	19	Cardiovascular diseases.....	2,005	32
Cancer.....	801	26	Accidents.....	532	17	Cancer.....	1,869	30
Suicide.....	498	16	Suicide.....	183	6	Suicide.....	681	11
Influenza, bronchitis, pneumonia.....	117	4	Maternal causes.....	134	4	Influenza, bronchitis, pneumonia.....	203	3

<sup>1</sup> Per 100,000 live births.

## 19.—Leading Causes of Death, by Sex at Various Age Groups, 1964—concluded

(Rates per 100,000 population)

Cause	Males		Cause	Females		Cause	Total	
	No.	Rate		No.	Rate		No.	Rate
45-64 YEARS								
Cardiovascular diseases.....	11,325	661	Cardiovascular diseases.....	4,203	250	Cardiovascular diseases.....	15,528	457
Cancer.....	4,543	265	Cancer.....	4,113	244	Cancer.....	8,656	255
Accidents.....	1,437	84	Accidents.....	439	26	Accidents.....	1,876	55
Influenza, bronchitis, pneumonia.....	501	29	Diabetes mellitus.....	299	18	Influenza, bronchitis, pneumonia.....	1,709	21
Suicide.....	476	28	Influenza, bronchitis, pneumonia.....	208	12	Suicide.....	630	19
65 YEARS OR OVER								
Cardiovascular diseases.....	29,528	4,232	Cardiovascular diseases.....	25,592	3,323	Cardiovascular diseases.....	55,120	3,755
Cancer.....	8,384	1,201	Cancer.....	6,095	791	Cancer.....	14,479	986
Influenza, bronchitis, pneumonia.....	2,413	346	Influenza, bronchitis, pneumonia.....	1,571	204	Influenza, bronchitis, pneumonia.....	3,984	271
Accidents.....	1,182	169	Diabetes mellitus.....	1,013	132	Accidents.....	2,135	145
Diabetes mellitus.....	771	110	Accidents.....	953	124	Diabetes mellitus.....	1,784	122
ALL AGES								
Cardiovascular diseases.....	42,358	437	Cardiovascular diseases.....	30,428	319	Cardiovascular diseases.....	72,786	378
Cancer.....	14,096	145	Cancer.....	11,541	121	Cancer.....	25,637	133
Accidents.....	7,614	79	Accidents.....	2,950	31	Accidents.....	10,564	55
Diseases of early infancy.....	3,900	40	Diseases of early infancy.....	2,639	28	Diseases of early infancy.....	6,539	34
Influenza, bronchitis, pneumonia.....	3,800	39	Influenza, bronchitis, pneumonia.....	2,479	26	Influenza, bronchitis, pneumonia.....	6,279	33



Subsection 2.—Infant Mortality

Table 1, pp. 236-237, and Table 20 show the striking improvement that has taken place in the rate of infant mortality during the past twenty years. Although 62,397 of the 2,342,626 children born in the five years 1960-64 died before reaching their first birthday, 157,576 others lived who *would have died* at the infant mortality rate prevailing in the period 1926-30. This improvement is attributable to many factors—the higher proportion of births taking place in hospital or under proper prenatal and postnatal care, better supervision of water supplies, improved sanitation, pasteurization of milk, the use of antibiotics, improved home environment as a result of higher living standards and, in recent years, the generally lower age of mothers.

The variations that exist in infant mortality rates from province to province and from one locality to another may be explained by differences in the extent to which these factors apply provincially or locally. Among the provinces, the 1964 male infant mortality rates ranged from a low of 24 to a high of 35, compared with the national average of 28—the latter including the very high rate among the Northwest Territories aboriginal population. Female rates ranged from 17 to 27, compared with the national rate of 21. While the national and provincial rates for both sexes have been declining steadily for some years, for some unknown reason there were recently a number of reversals in provincial rates.

Table 20 shows that mortality among male infants is 25 p.c. to 30 p.c. higher than that among female infants for Canada, with wider variations for the individual provinces. For the country as a whole, out of every 1,000 infant boys born alive in 1964, 28 died before reaching their first birthday, whereas out of every 1,000 infant girls born alive, 21 died within one year. As already pointed out, there are on the average 1,057 males born to every 1,000 females but, because male infant mortality is higher, the excess of males is reduced greatly by the end of the first year. For example, in 1961-64 there were 956,795 male children born compared with 907,280 female children, an excess of 49,515 or 5.5 p.c.; in the same period, 28,371 male children died during their first year compared with 20,949 female children so that the excess of males at one year of age was reduced to 42,093 or 4.7 p.c.

20.—Distribution of Infant Deaths by Province and Sex, 1941-64

Province and Year	Males	Fe- males	Rate per 1,000 Male Live Births	Rate per 1,000 Female Live Births	Province and Year	Males	Fe- males	Rate per 1,000 Male Live Births	Rate per 1,000 Female Live Births
	No.	No.							
Newfoundland.....	1951 361	276	60.3	48.0	Quebec.....	1941 3,916	2,854	85.3	65.9
	1961 335	253	41.7	33.5		1951 3,335	2,486	53.7	42.3
	1962 327	270	42.2	36.9		1961 2,464	1,855	34.7	28.0
	1963 377	215	47.3	28.7		1962 2,491	1,803	35.9	27.5
	1964 259	197	35.1	27.0		1963 2,228	1,784	32.6	27.3
						1964 2,060	1,527	30.6	24.1
P. E. Island.....	1941 102	61	94.6	62.8	Ontario.....	1941 1,910	1,384	51.3	39.5
	1951 60	30	43.7	23.5		1951 2,010	1,535	33.9	27.6
	1961 55	38	37.4	27.8		1961 2,090	1,536	25.9	20.0
	1962 50	37	33.2	25.4		1962 2,054	1,567	25.7	20.6
	1963 46	17	30.6	11.8		1963 2,043	1,489	25.6	19.7
	1964 50	22	35.2	16.8		1964 1,898	1,357	24.1	18.3
Nova Scotia.....	1941 545	363	77.0	53.2	Manitoba.....	1941 447	341	58.7	47.4
	1951 344	250	38.9	30.2		1951 369	289	35.6	30.2
	1961 309	229	31.0	24.3		1961 341	247	28.6	21.7
	1962 320	294	32.0	31.2		1962 350	250	29.9	22.3
	1963 306	207	31.4	22.5		1963 310	251	26.8	22.5
	1964 263	201	28.1	22.4		1964 304	251	27.2	23.8
New Brunswick...	1941 515	421	83.1	69.3	Saskatchewan.....	1941 531	415	56.1	46.2
	1951 472	363	57.6	46.0		1951 353	323	31.8	30.4
	1961 248	186	29.1	23.0		1961 373	245	30.3	21.0
	1962 272	226	31.9	25.5		1962 339	266	28.5	23.3
	1963 244	191	29.9	25.1		1963 385	253	31.9	22.0
	1964 223	177	28.4	23.7		1964 332	257	28.6	23.2

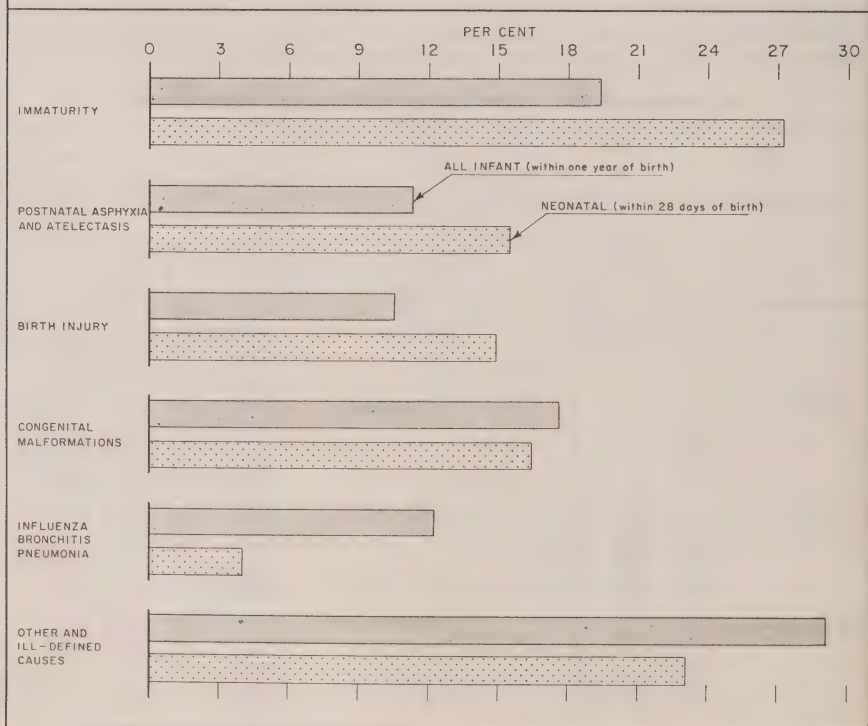
## 20.—Distribution of Infant Deaths by Province and Sex, 1941-64—concluded

Province or Territory and Year	Males	Fe- males	Rate per 1,000 Male Live Births	Rate per 1,000 Female Live Births	Territory and Year	Males	Fe- males	Rate per 1,000 Male Live Births	Rate per 1,000 Fema- le Live Births
	No.	No.				No.	No.		
Alberta.....1941	506	373	57.0	44.3	Northwest Territories.....1951	43	27	135.6	81.3
1951	531	358	38.6	27.0	1961	73	51	128.1	93.2
1961	612	432	30.8	22.7	1962	77	59	131.8	107.3
1962	565	419	28.6	22.0	1963	75	46	124.4	82.4
1963	535	373	27.1	19.9	1964	52	36	79.3	59.0
1964	518	347	28.0	19.7					
British Columbia..1941	316	236	41.1	32.1	Canada.....1941 <sup>1</sup>	8,788	6,448	67.0	51.9
1951	487	352	33.8	25.8	1951	8,375	6,298	42.7	34.0
1961	534	411	27.1	21.8	1961	7,447	5,493	30.5	23.7
1962	520	358	26.8	19.1	1962	7,379	5,562	30.6	24.3
1963	522	357	27.3	19.5	1963	7,079	5,191	29.6	22.9
1964	497	321	27.0	18.3	1964	6,466	4,703	27.8	21.4
Yukon Territory...1951	10	9	57.8	53.3					
1961	13	10	45.8	36.5					
1962	14	13	47.1	52.0					
1963	8	8	32.9	31.3					
1964	10	10	37.2	40.8					

<sup>1</sup> Excludes Newfoundland and the Yukon and Northwest Territories.

## CAUSES OF INFANT AND NEONATAL DEATHS, 1964

(PERCENTAGES OF TOTAL INFANT AND TOTAL NEONATAL DEATHS)



**Infant Mortality in Urban Centres.**—Because of the relatively small numbers of infant deaths in individual cities and towns, the rates for these centres usually vary widely from year to year. As is evident from Table 2, pp. 238-240, many cities and towns have maintained consistently low rates as compared with the national rate or the rate for the province in which they are situated.

**Causes of Infant Deaths.**—In 1964 almost 70 p.c. of the infant deaths were caused by immaturity, congenital malformations, pneumonia, postnatal asphyxia and atelectasis, and injury at birth. Immaturity was the underlying cause of 2,159 and was an added complication in 2,828 others. Congenital malformations accounted for 1,969 fatalities, pneumonia for 1,255, postnatal asphyxia for 1,256 and injury at birth for 1,170. Rates for all these causes decreased in 1964.

21.—Infant Mortality and Rates per 100,000 Live Births, by Cause, 1962-64

Inter- national List No.	Cause of Death	Numbers of Deaths			Rates per 100,000 Live Births		
		1962	1963	1964	1962	1963	1964
001-019	Tuberculosis.....	6	5	3	1	—	1
020-029	Syphilis.....	3	3	—	1	1	—
045-048	Dysentery.....	7	1	1	1	—	—
050	Scarlet fever.....	1	—	—	—	—	—
056	Whooping cough.....	19	24	15	4	5	3
057	Meningococcal infections.....	19	16	18	4	3	4
085	Measles.....	34	24	23	7	5	5
140-239	Neoplasms.....	37	48	45	8	10	10
273	Diseases of thymus gland.....	19	5	12	4	1	3
325	Mental deficiency.....	65	67	58	14	14	13
340	Meningitis (non-meningococcal).....	94	77	86	20	17	19
391-392	Otitis media.....	66	49	63	14	11	14
470-475	Acute upper respiratory infections.....	45	46	30	10	10	7
480-483	Influenza.....	97	100	37	21	21	8
490-493	Pneumonia (4 weeks and over).....	1,232	1,146	948	262	246	209
500-502	Bronchitis.....	84	45	72	18	10	16
543	Gastritis and duodenitis.....	2	3	2	—	1	—
560-570	Hernia and intestinal obstruction.....	97	108	96	21	23	21
571	Gastro-enteritis and colitis.....	373	372	208	79	80	46
572	Chronic enteritis, and ulcerative colitis.....	4	2	3	1	—	1
750-759	Congenital malformations.....	2,230	2,068	1,969	475	444	435
760, 761	Injury at birth.....	1,338	1,232	1,170	285	265	258
762	Postnatal asphyxia and atelectasis.....	1,475	1,368	1,256	314	294	277
763	Pneumonia of newborn (under 4 weeks).....	408	360	307	87	77	68
764	Diarrhoea of newborn (under 4 weeks).....	73	67	57	16	14	13
765-768	Other infections of newborn.....	45	50	41	10	11	9
769	Antenatal toxemia.....	107	87	91	23	19	20
770	Erythroblastosis.....	336	289	251	72	62	55
771	Hæmorrhagic disease of newborn.....	84	83	93	18	18	21
772	Nutritional maladjustment.....	48	35	36	10	8	8
773	Ill-defined diseases peculiar to early infancy.....	1,095	1,118	1,077	233	240	238
774-776	Immaturity.....	2,304	2,348	2,159	491	504	477
795	Ill-defined and unknown causes.....	46	51	27	10	11	6
E810-E825	Motor vehicle accidents.....	17	19	32	4	4	7
E900-E904	Accidental falls.....	16	13	9	3	3	2
E916	Accidents caused by fire.....	31	22	18	7	5	4
E921, E922	Inhalation and ingestion of food or other object.....	313	290	276	67	62	61
E924, E925	Accidental mechanical suffocation.....	147	162	158	31	35	35
	Other accidental and violent deaths.....	51	50	43	11	11	9
	Other specified causes.....	473	417	379	101	90	84
	<b>Totals, All Causes.....</b>	<b>12,941</b>	<b>12,270</b>	<b>11,169</b>	<b>2,755</b>	<b>2,634</b>	<b>2,466</b>

**Age at Death.**—Of the 11,169 infants who died within a year of their birth, 7,831, or over 70 p.c., were less than one month old—4,724 during the first day of life, 2,295 from the second to the seventh day, and 812 during the three following weeks.



## 22.—Infant Deaths, by Age, 1964

Time of Death	Number	Per-centage	Cumulative		Time of Death	Number	Per-centage	Cumulative	
			Number	Per-centage				Number	Per-centage
1st day.....	4,724	42.3	4,724	42.3	1st month.....	7,831	70.1	7,831	70.1
2nd ".....	903	8.1	5,627	50.4	2nd ".....	784	7.0	8,615	77.1
3rd ".....	690	6.2	6,317	56.6	3rd ".....	590	5.3	9,205	82.4
4th ".....	282	2.5	6,599	59.1	4th ".....	552	4.9	9,757	87.4
5th ".....	190	1.7	6,789	60.8	5th ".....	349	3.1	10,106	90.5
6th ".....	124	1.1	6,913	61.9	6th ".....	247	2.2	10,353	92.7
7th ".....	106	0.9	7,019	62.8	7th ".....	202	1.8	10,555	94.5
					8th ".....	158	1.4	10,713	95.9
1st week.....	7,019	62.8	7,019	62.8	9th ".....	143	1.3	10,856	97.2
2nd ".....	388	3.5	7,407	66.3	10th ".....	107	1.0	10,963	98.2
3rd ".....	234	2.1	7,641	68.4	11th ".....	111	1.0	11,074	99.1
4th ".....	190	1.7	7,831	70.1	12th ".....	95	0.9	11,169	100.0

*Neonatal Mortality.*—Deaths occurring within the first four weeks of birth are conventionally referred to as 'neonatal' deaths. Table 22 shows that about 70 p.c. of all infant deaths occur in this hazardous neonatal period and, as would be expected, are caused mainly by conditions associated with pregnancy or delivery. Table 23 gives numbers and rates of neonatal deaths for 1941-64 and the chart on p. 260 compares the major causes of such deaths with all infant deaths from the same causes.

23.—Neonatal Mortality,<sup>1</sup> by Province, 1941-64

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
NUMBERS													
Av. 1941-45....	344	58	418	453	3,329	2,061	425	469	463	400	..	..	8,076
" 1946-50....	346	52	403	527	3,395	2,511	442	505	553	533	..	..	9,052
" 1951-55....	294	45	342	391	3,241	2,476	395	426	552	535	8	30	8,736
" 1956-60....	324	54	334	322	3,137	2,652	402	414	622	648	8	54	8,970
1962.....	329	55	380	302	2,948	2,682	381	413	635	601	15	42	8,783
1963.....	312	37	316	276	2,813	2,619	347	401	643	587	7	53	8,411
1964.....	278	43	305	270	2,558	2,402	367	402	616	550	9	31	7,831
RATES PER 1,000 LIVE BIRTHS													
Av. 1941-45....	37.0	26.5	27.6	34.7	34.0	26.5	26.8	25.4	24.6	22.6	..	..	29.2
" 1946-50....	28.0	18.2	22.4	31.2	29.4	23.9	22.9	23.1	22.8	20.6	..	..	25.5
" 1951-55....	22.4	16.5	18.7	23.7	25.2	19.2	18.5	18.1	17.8	17.1	19.9	45.0	21.0
" 1956-60....	21.7	20.1	17.5	19.4	22.4	17.4	18.0	17.2	16.8	16.6	15.5	57.1	19.1
1962.....	21.8	19.6	19.6	18.3	21.8	17.2	16.6	17.7	16.4	15.8	27.4	37.0	18.7
1963.....	20.2	12.5	16.7	17.5	21.0	16.9	15.3	17.0	16.7	15.7	14.0	45.7	18.1
1964.....	18.9	15.8	16.7	17.6	19.5	15.7	16.9	17.7	17.0	15.3	17.5	24.5	17.3

<sup>1</sup> Prior to 1951, includes deaths under one calendar month of age; since 1951, includes deaths under 28 days.

*Perinatal Mortality.*—'Perinatal' mortality—the combined total of stillbirths and deaths of live-born infants occurring 'around' the natal period—is a relatively new vital statistics concept. Since such deaths frequently have the same underlying causes, associated with pregnancy or delivery, regardless of whether they occur before or after delivery, perinatal deaths are generally considered as including the combined total of stillbirths occurring after at least 28 weeks pregnancy and deaths of live-born infants who fail to survive the first week of life.

In 1964 there were 12,539 such 'deaths', of which 5,520 were stillborn and 7,019 live-born but failed to survive one week, with a national rate of 27.4 such deaths for every 1,000 total deliveries. This perinatal rate has declined slowly but steadily from 65.2 in 1921 to 27.4 in 1964.

### Subsection 3.—Maternal Mortality

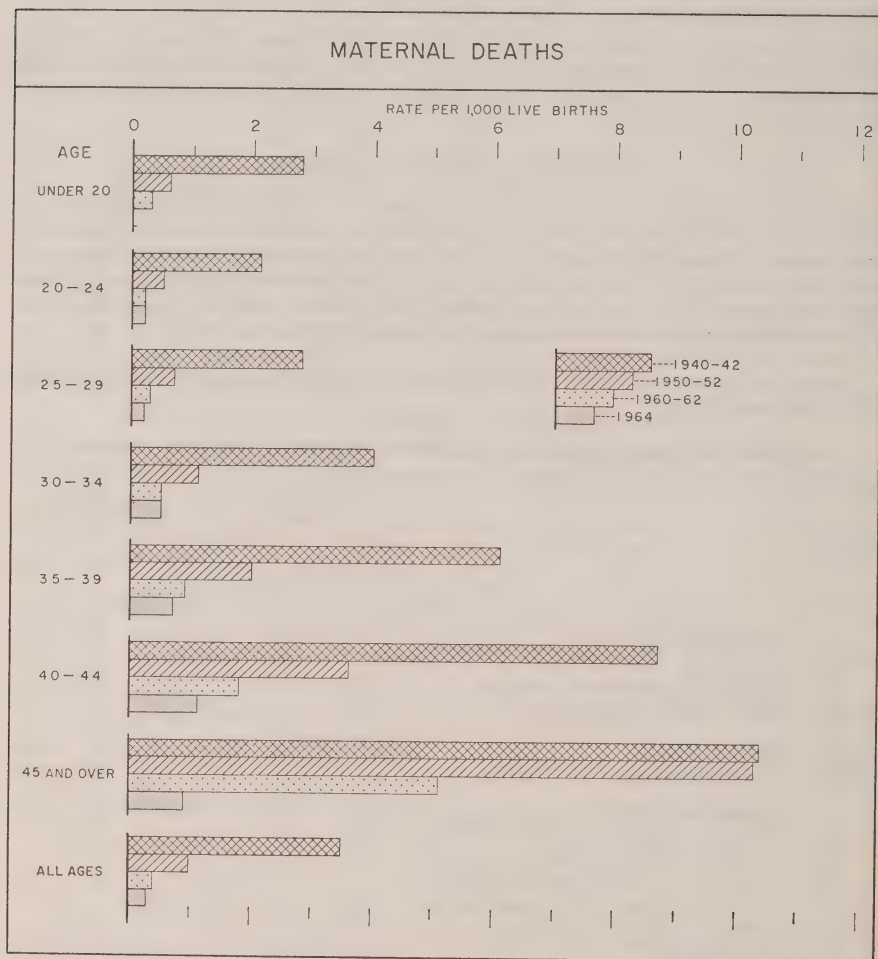
As indicated in Table 1, pp. 236-237, the number of mothers who die in pregnancy and childbirth has been greatly reduced during the past two decades, reaching an all-time low of 137 in 1964. Since 1951 the rate of maternal mortality per 10,000 births has been under 10 and since 1959 it has been under five. Despite this improvement, Canada's maternal death rate (3.0 in 1964) is higher than those for several other countries (see p. 276). Mortality among unmarried mothers is higher than among married mothers.

*Causes of Maternal Deaths.*—Table 24 shows the main causes of maternal deaths during the years 1962-64.

24.—Maternal Mortality and Rates per 100,000 Live Births, by Cause, 1962-64

Inter-national List No.	Cause of Death	Numbers of Deaths			Rates per 100,000 Live Births		
		1962	1963	1964	1962	1963	1964
640, 641	<b>Complications of Pregnancy</b> .....	52	43	35	11	9	8
	Infections of the genito-urinary tract during pregnancy.....	3	6	3	1	1	1
642	Toxæmias of pregnancy.....	23	21	17	5	5	4
645	Ectopic pregnancy.....	6	8	6	1	2	1
646-649	Other complications of pregnancy.....	20	8	9	4	2	2
	<b>Abortion</b> .....	24	27	22	5	6	5
650, 652	Abortion without mention of sepsis.....	9	6	10	2	1	2
651	Abortion with sepsis.....	15	21	12	3	5	3
	<b>Complications of Delivery</b> .....	78	67	48	17	14	11
670	Delivery complicated by placenta prævia or antepartum hæmorrhage.....	21	20	6	4	4	1
671	Delivery complicated by retained placenta...	3	5	4	1	1	1
672	Delivery complicated by other postpartum hæmorrhage.....	21	6	15	4	1	3
673, 674	Delivery complicated by abnormality of bony pelvis or malposition of fœtus.....	6	8	5	1	2	1
675	Delivery complicated by prolonged labour of other origin.....	5	4	1	1	1	--
676, 677	Delivery with laceration or other trauma.....	8	10	11	2	2	2
678	Delivery with other complications of childbirth.....	14	14	6	3	3	1
	<b>Complications of the Puerperium</b> .....	37	28	32	8	6	7
680	Puerperal urinary infection without other sepsis.....	—	—	1	—	—	--
681	Sepsis of childbirth and the puerperium.....	13	4	5	3	1	1
682-684	Puerperal phlebitis, thrombosis, pyrexia, pulmonary embolism.....	12	9	13	3	2	3
685, 686	Puerperal eclampsia and toxæmia.....	1	5	1	--	1	--
687-689	Other.....	11	10	12	2	2	3
	<b>Totals, All Puerperal Causes</b> .....	191	165	137	41	35	30

Of the 137 maternal deaths in the latest year, 35 resulted from complications arising during pregnancy, about half of these from some type of toxæmia; 48 resulted from a complication of delivery, 32 from a post-delivery complication and 22 from abortive delivery. There has been an encouraging drop in maternal deaths caused by toxæmia during the past three or four years.



**Age at Death.**—Table 25 shows the distribution of maternal deaths by age group; the average age at death is about four years higher than the average age of all mothers at the time of childbirth. While death rates for all age groups of mothers have been declining, there have been rather significant changes in the rates. Formerly, the rate for mothers in the age group 30-34 was twice or three times as high as the rate for the 20-24 group, but recently mortality rates for the four age groups of mothers under 35 years of age have not been far apart, although after age 35 a sharp rise occurs.



## 25.—Maternal Mortality and Rates per 10,000 Live Births, by Age Group, 1962-64

(Exclusive of Newfoundland)

Age Group	Maternal Deaths						Rates per 10,000 Live Births		
	1962		1963		1964		1962	1963	1964
	No.	p.c.	No.	p.c.	No.	p.c.			
Under 20 years.....	10	5.4	5	3.2	2	1.5	2.5	1.2	0.5
20—24 “.....	22	11.8	23	14.6	21	16.0	1.6	1.6	1.5
25—29 “.....	37	19.9	33	20.9	21	16.0	3.0	2.7	1.8
30—34 “.....	45	24.2	34	21.5	39	29.8	5.2	4.0	4.8
35—39 “.....	41	22.0	42	26.6	30	22.9	8.4	8.8	6.6
40—44 “.....	27	14.5	20	12.7	17	13.0	17.5	13.4	11.4
45—49 “.....	4	2.2	—	—	1	0.8	38.6	—	9.3
50 years or over.....	—	—	1	0.6	—	—	—	—	—
<b>Totals, All Ages.....</b>	<b>186</b>	<b>100.0</b>	<b>153</b>	<b>100.0</b>	<b>131</b>	<b>100.0</b>	<b>4.1</b>	<b>3.5</b>	<b>3.0</b>
Average age at death.....yrs.	32.5		32.3		32.4		...	...	...
Median age at death <sup>1</sup> .....“	32.7		32.6		32.8		...	...	...

<sup>1</sup> The age below and above which half of the maternal deaths occurred.

## Section 4.—Natural Increase\*

The excess of births over deaths, commonly referred to as natural increase, is a very important factor in the growth of a population. Although the collection of Canadian birth and death statistics began only in 1921, some idea of the rate of natural increase in the early Canadian population may be learned from the estimates shown at the beginning of Sections 2 and 3, which resulted in the following natural increase rates:—

Intercensal Period	Estimated Average Annual Natural Increase Rate (per 1,000 Population)	Intercensal Period	Estimated Average Annual Natural Increase Rate (per 1,000 Population)
1851-61.....	23	1891-1901.....	14
1861-71.....	19	1901-11.....	18
1871-81.....	18	1911-21.....	16
1881-91.....	16		

Because of the combination of high birth rates and declining death rates—despite the fact that death rates were still relatively high—the annual rate of natural increase during the late 1800s and early 1900s varied between 14 and 23; in other terms, the population increased at the rate of 1.5 p.c. to 2.5 p.c. each year by natural increase alone, regardless of any increase attributable to immigration. During the 1920s and early 1930s the birth rate declined more than the death rate and the natural increase rate dropped to a record low of 9.7 in 1937. But higher birth rates during and after World War II and a gradually declining death rate caused the natural increase rate to rise steadily from 10.9 in 1939 to a record 20.3 in 1954. Although after that year there has been a steady drop because of declining birth rates, the natural increase rate in 1964 was still quite high at 15.9.

Table 1, pp. 236-237, gives average rates of natural increase in the provinces for five-year periods 1941-60 and Table 26 gives the provincial figures for males and females separately for 1941, 1951 and 1961-64. High birth rates and declining death rates have given Newfoundland, Alberta, New Brunswick and Quebec the highest rates of natural increase in Canada in recent years (excluding the Yukon and Northwest Territories).

\* For international comparisons, see Section 7, pp. 275-276.

**26.—Natural Increase and Rates per 1,000 Population, by Sex and Province, 1941, 1951 and 1961-64**

Province or Territory and Year	Excess of Births Over Deaths	Rate per 1,000 Popu- lation	Males		Females	
			Number	Rate per 1,000 Males	Number	Rate per 1,000 Females
Newfoundland.....1951	8,734	24.2	4,369	23.6	4,365	24.8
1961	12,553	27.5	6,350	27.0	6,203	27.8
1962	11,866	25.3	5,945	24.7	5,921	25.9
1963	12,260	25.5	6,130	24.9	6,130	26.2
1964	11,617	23.7	5,577	22.1	6,040	25.3
Prince Edward Island.....1941	915	9.6	483	9.8	432	9.4
1951	1,747	17.9	872	17.4	875	18.2
1961	1,860	17.8	925	17.3	935	18.2
1962	1,749	16.5	930	17.2	819	15.8
1963	1,970	18.5	933	17.1	1,037	19.8
1964	1,746	16.3	832	15.2	914	17.5
Nova Scotia.....1941	6,989	12.1	3,335	11.3	3,654	13.0
1951	11,313	17.6	5,596	17.2	5,717	18.0
1961	13,247	18.0	6,435	17.2	6,812	18.8
1962	13,090	17.5	6,417	16.9	6,673	18.2
1963	12,609	16.7	6,109	15.9	6,500	17.5
1964	11,930	15.7	5,670	14.7	6,260	16.7
New Brunswick.....1941	7,088	15.5	3,396	14.5	3,692	16.5
1951	11,202	21.8	5,522	21.3	5,680	22.1
1961	11,895	19.8	5,844	19.3	6,051	20.5
1962	11,679	19.2	5,802	18.9	5,877	19.6
1963	10,956	17.9	5,346	17.2	5,610	18.5
1964	10,602	17.2	5,125	16.4	5,477	18.0
Quebec.....1941	54,871	16.5	27,561	16.5	27,310	16.5
1951	86,030	21.2	42,961	21.2	43,069	21.2
1961	100,130	19.1	49,741	18.9	50,389	19.2
1962	97,858	18.3	48,060	17.9	49,798	18.6
1963	95,423	17.4	46,675	17.1	48,748	17.8
1964	93,293	16.7	45,649	16.4	47,644	17.1
Ontario.....1941	33,036	8.7	15,705	8.2	17,331	9.3
1951	70,846	15.4	34,737	15.0	36,109	15.8
1961	106,666	17.1	51,538	16.4	55,128	17.8
1962	103,897	16.4	50,366	15.8	53,531	17.0
1963	101,472	15.8	48,927	15.1	52,545	16.4
1964	100,525	15.3	48,610	14.7	51,915	15.8
Manitoba.....1941	8,317	11.4	3,834	10.1	4,483	12.7
1951	13,207	17.0	6,388	16.2	6,819	17.9
1961	15,919	17.3	7,445	15.9	8,474	18.7
1962	15,465	16.5	7,216	15.2	8,249	17.9
1963	14,823	15.6	6,929	14.4	7,894	16.8
1964	14,033	14.6	6,601	13.6	7,432	15.7
Saskatchewan.....1941	12,006	13.4	5,651	11.8	6,355	15.2
1951	15,293	18.4	7,192	16.6	8,101	20.4
1961	16,887	18.2	7,766	16.2	9,121	20.5
1962	16,337	17.6	7,500	15.6	8,837	19.7
1963	16,102	17.2	7,403	15.4	8,694	19.3
1964	15,309	16.3	7,024	14.5	8,285	18.1
Alberta.....1941	10,923	13.7	5,016	11.8	5,907	16.0
1951	19,836	21.2	9,331	19.0	10,505	23.5
1961	30,051	22.5	14,194	20.6	15,857	24.7
1962	29,540	21.5	13,920	19.7	15,620	23.6
1963	29,023	20.7	13,834	19.1	15,189	22.3
1964	26,687	18.7	12,466	16.9	14,221	20.5
British Columbia.....1941	6,533	8.0	2,342	5.4	4,191	10.9
1951	16,439	14.1	7,107	11.9	9,332	16.4
1961	24,188	14.9	10,829	13.1	13,359	16.7
1962	23,216	14.0	10,205	12.1	13,011	15.9
1963	22,449	13.2	10,042	11.7	12,407	14.9
1964	19,846	11.5	8,585	9.8	11,261	13.1
Yukon Territory.....1951	257	28.6	115	20.9	142	39.4
1961	464	31.7	218	26.7	246	38.1
1962	472	31.5	247	29.4	225	34.1

26.—Natural Increase and Rates per 1,000 Population, by Sex and Province, 1941, 1951 and 1961-64—concluded

Territory and Year	Excess of Births Over Deaths	Rate per 1,000 Population	Males		Females	
			Number	Rate per 1,000 Males	Number	Rate per 1,000 Females
Yukon Territory—concluded.....						
1963	418	27.9	190	22.6	228	34.5
1964	427	26.7	210	23.9	217	30.1
Northwest Territories.....						
1951	365	22.8	164	18.2	201	28.7
1961	855	37.2	409	31.9	446	43.8
1962	825	34.4	403	30.3	422	39.4
1963	895	37.3	441	33.2	454	42.4
1964	1,050	42.0	529	38.6	521	46.1
<b>Canada.....</b>						
1941 <sup>1</sup>	140,678	12.2	67,323	11.4	73,355	13.1
1951	255,269	18.2	124,354	17.5	130,915	18.9
1961	334,715	18.4	161,694	17.5	173,021	19.2
1962	325,994	17.6	157,011	16.7	168,983	18.4
1963	318,400	16.8	152,964	16.0	165,436	17.7
1964	307,065	15.9	146,878	15.1	160,187	16.8

<sup>1</sup> Excludes Newfoundland and the Yukon and Northwest Territories.

The rates of natural increase are higher for females than for males in all provinces because of the higher death rates for males. In the western provinces particularly, the ratio of males to females in the total population is higher than in other parts of Canada and this in itself tends to lower the rate of natural increase. In Canada, a country with a fairly young population and where immigration has been on a large scale, an excess of males is to be expected but the higher rate of natural increase for females may gradually reduce this excess. The trend is toward an eventual excess of females in the total population—as there now is in most European countries—unless immigration again raises the male ratio or death rates among males are greatly reduced.

**Natural Increase in Urban Centres.**—The classification of births and deaths by place of residence makes it possible to compile the natural increase in the population of urban centres; the figures for centres of over 20,000 population are presented in Table 2, pp. 238-240.

## Section 5.—Marriages and Divorces

### Subsection 1.—Marriages\*

In 1964 Canada's crude marriage rate was 7.2 per 1,000 population, an increase over the rate of 6.9 in 1963 which was the lowest since 1934. Provincial rates in 1964 varied from 6.2 per 1,000 population for Prince Edward Island to 7.5 for New Brunswick.

Table 27 gives the number of marriages and the marriage rates for Canada and the provinces for 1941, 1951 and the four consecutive years 1961-64, together with percentages of brides and bridegrooms according to place of birth. For the country as a whole, over 83 p.c. of the bridegrooms of 1964 were born in Canada and 69 p.c. in the province in which they were married; almost 87 p.c. of the brides were born in Canada and 74 p.c. in the province in which they were married. During the postwar years until 1959 an increasing number of marriages were of persons born outside the country, because of the heavy immigration of young persons. However, since 1959 the proportion of foreign-born bridegrooms declined from 19.6 to 16.8 p.c. in 1964 and the proportion of foreign-born brides from 15.9 to 13.6 p.c. There are wide variations in the pattern of intermarriage of foreign-born and native-born persons as between provinces; in the older Atlantic Provinces and in Quebec there is a greater tendency than in the other provinces to marry native Canadians and in these areas both partners are often born in the same province.

\* For international comparisons, see Section 7, pp. 275-276.



**27.—Marriages and Rates per 1,000 Population, by Province, with Percentage Distribution of Bridegrooms and Brides by Nativity, 1941, 1951 and 1961-64**

Province and Year	Total Marriages	Rate per 1,000 Popu- lation	Born in Province Where Married		Born in Other Provinces		Born Outside Canada		
			Grooms	Brides	Grooms	Brides	Grooms	Brides	
	No.		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	
Newfoundland.....	1951	2,517	7.0	85.2	96.7	2.4	1.9	12.4	1.4
	1961	3,306	7.2	88.0	97.2	3.8	1.6	8.2	1.2
	1962	3,274	7.0	89.4	96.9	3.8	1.5	6.8	1.7
	1963	3,280	6.8	88.5	96.5	3.7	1.5	7.9	2.0
	1964	3,385	6.9	87.6	96.0	3.8	1.8	8.7	2.2
Prince Edward Island.....	1941	673	7.1	78.8	86.6	15.0	9.4	6.2	4.0
	1951	583	5.9	82.3	91.1	12.9	6.0	4.8	2.9
	1961	624	6.0	81.7	89.6	15.4	7.2	2.9	3.2
	1962	677	6.4	76.1	91.0	20.8	6.8	3.1	2.2
	1963	684	6.4	73.2	87.3	22.7	11.1	4.1	1.6
	1964	662	6.2	76.9	90.0	18.4	7.7	4.7	2.3
Nova Scotia.....	1941	6,596	11.4	73.2	83.8	16.8	9.5	10.0	6.7
	1951	5,094	7.9	78.2	86.7	15.9	9.0	6.0	4.3
	1961	5,292	7.2	75.2	87.8	18.8	8.8	6.0	3.4
	1962	5,256	7.0	75.9	88.0	18.9	9.0	5.2	3.0
	1963	5,127	6.8	76.3	87.5	17.6	9.0	6.1	3.5
	1964	5,339	7.0	76.2	88.0	17.9	9.0	6.0	3.0
New Brunswick.....	1941	4,941	10.8	78.5	84.4	13.3	9.7	8.2	5.9
	1951	4,386	8.5	80.0	86.9	10.1	6.7	9.8	6.4
	1961	4,504	7.5	75.4	86.3	14.9	7.9	9.7	5.8
	1962	4,382	7.2	75.5	85.8	14.7	8.3	9.9	5.9
	1963	4,391	7.2	75.7	85.9	14.0	8.2	10.3	5.9
	1964	4,611	7.5	74.1	85.4	15.0	8.4	10.9	6.3
Quebec.....	1941	32,782	9.8	86.1	89.3	6.7	5.9	7.2	4.8
	1951	35,704	8.8	86.7	89.5	6.1	5.5	7.2	5.0
	1961	35,943	6.8	83.6	87.4	5.7	4.8	10.7	7.8
	1962	37,038	6.9	85.1	88.4	5.5	4.9	9.4	6.8
	1963	37,358	6.8	85.4	88.6	5.6	4.8	9.0	6.5
	1964	39,400	7.1	84.4	87.6	5.6	4.9	10.0	7.5
Ontario.....	1941	43,270	11.4	89.2	89.0	4.2	4.5	6.7	6.5
	1951	45,198	9.8	65.9	72.4	14.6	12.2	19.5	15.4
	1961	44,434	7.1	61.5	67.2	12.9	11.0	25.6	21.8
	1962	44,454	7.0	62.8	67.7	12.8	11.5	24.4	20.8
	1963	45,306	7.0	62.4	67.8	13.5	11.6	24.1	20.7
	1964	48,501	7.4	61.6	66.7	13.8	11.9	24.6	21.4
Manitoba.....	1941	8,305	11.4	63.0	73.7	17.4	15.0	19.6	11.4
	1951	7,366	9.5	67.9	75.1	15.4	13.3	16.8	11.6
	1961	6,512	7.1	66.6	74.5	18.5	14.5	14.8	11.0
	1962	6,354	6.8	66.9	75.9	18.0	13.0	15.1	11.1
	1963	6,694	7.0	67.2	75.7	18.4	13.8	14.4	10.5
	1964	6,796	7.1	67.5	75.2	18.1	14.1	14.4	10.7
Saskatchewan.....	1941	7,036	7.9	64.7	79.1	16.1	10.0	19.1	10.9
	1951	6,805	8.2	78.3	86.4	10.7	6.4	11.1	7.2
	1961	6,149	6.6	79.3	85.8	11.9	8.7	8.8	5.5
	1962	6,044	6.5	80.8	85.8	11.7	8.7	8.3	5.6
	1963	6,197	6.6	78.4	85.3	13.4	9.1	8.2	5.7
	1964	6,382	6.8	78.8	85.1	13.5	9.4	7.8	5.5
Alberta.....	1941	8,470	10.6	50.0	63.4	23.9	19.9	26.2	16.8
	1951	9,305	9.9	56.0	67.4	25.7	19.6	18.3	13.0
	1961	10,474	7.9	54.4	62.3	25.8	21.8	19.8	15.9
	1962	10,423	7.6	54.4	62.0	25.9	22.8	19.7	15.2
	1963	10,163	7.2	55.4	62.5	26.0	23.1	18.6	14.4
	1964	10,634	7.4	56.2	62.9	26.2	22.9	17.6	14.2
British Columbia.....	1941	9,769	11.9	35.9	43.5	35.6	37.1	28.5	19.4
	1951	11,272	9.7	35.5	41.6	43.1	43.0	21.3	15.5
	1961	10,964	6.7	36.4	45.9	35.9	32.4	27.7	21.8
	1962	11,196	6.7	39.8	48.0	34.8	31.9	25.4	20.1
	1963	11,677	6.9	39.7	48.8	35.4	31.3	24.9	19.8
	1964	12,158	7.0	42.1	50.3	34.4	30.1	23.5	19.6

27.—Marriages and Rates per 1,000 Population, by Province, with Percentage Distribution of Bridegrooms and Brides by Nativity, 1941, 1951 and 1961-64—concluded

Territory and Year	Total Marriages	Rate per 1,000 Population	Born in Province Where Married		Born in Other Provinces		Born Outside Canada	
			Grooms	Brides	Grooms	Brides	Grooms	Brides
	No.		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Yukon Territory.....	1961 128	8.8	12.5	24.2	63.3	52.3	24.2	23.4
	1962 109	7.3	10.1	26.6	67.0	53.2	22.9	20.2
	1963 95	6.3	11.6	25.3	65.3	60.0	23.2	14.7
	1964 94	5.9	11.7	19.1	64.9	62.8	23.4	18.1
Northwest Territories.....	1961 145	6.3	54.5	61.4	35.9	31.7	9.7	6.9
	1962 174	7.3	60.9	66.7	27.6	26.4	11.5	6.9
	1963 139	5.8	69.1	74.1	20.1	20.1	10.8	5.8
	1964 173	6.9	56.1	67.1	37.0	30.1	6.9	2.9
Canada <sup>1</sup> .....	1941 121,842	10.6	76.8	81.5	11.4	10.1	11.7	8.4
	1951 128,230	9.2	70.5	76.5	15.1	12.8	14.5	10.6
	1961 128,475	7.0	67.9	74.2	14.3	11.7	17.9	14.1
	1962 129,381	7.0	69.2	75.0	14.1	11.8	16.7	13.2
	1963 131,111	6.9	69.1	75.0	14.5	11.9	16.5	13.1
	1964 138,135	7.2	68.7	74.4	14.5	11.9	16.8	13.6

<sup>1</sup> Newfoundland included from 1951 and the Yukon and Northwest Territories from 1961.

**Age and Marital Status of Brides and Bridegrooms.**—Table 28 shows that 91.1 p.c. of the brides and 91.4 p.c. of the grooms in 1964 had never previously married, and that 4.8 p.c. of the brides and 4.2 p.c. of the bridegrooms had been widowed. The average age at marriage of bachelors was 25.4 years and that of spinsters 22.7 years. The average age of widowers and widows at time of remarriage was slightly more than double that of bachelors and spinsters.

28.—Brides and Bridegrooms, by Age and Marital Status, 1964

Age Group	BRIDES							
	Numbers				Percentages			
	Spinsters	Widows	Divorced	Total	Spinsters	Widows	Divorced	Total
12—14 years.....	90	—	—	90	0.1	—	—	0.1
15—19 “.....	42,011	19	17	42,047	33.4	0.3	0.3	30.4
20—24 “.....	63,035	188	740	63,963	50.1	2.8	13.1	46.3
25—29 “.....	12,633	333	1,317	14,283	10.0	5.0	23.3	10.3
30—34 “.....	3,809	393	1,118	5,320	3.0	5.9	19.8	3.9
35—39 “.....	1,820	534	907	3,261	1.4	8.0	16.1	2.4
40—44 “.....	1,029	799	703	2,531	0.8	12.0	12.5	1.8
45—49 “.....	569	937	455	1,961	0.5	14.1	8.1	1.4
50—54 “.....	434	944	227	1,605	0.3	14.2	4.0	1.2
55—59 “.....	215	825	97	1,137	0.2	12.4	1.7	0.8
60—64 “.....	118	704	39	861	0.1	10.6	0.7	0.6
65 years or over.....	70	980	24	1,074	0.1	14.7	0.4	0.8
<b>Totals, Stated Ages..</b>	<b>125,833</b>	<b>6,656</b>	<b>5,644</b>	<b>138,133</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Age not stated.....	1	1	—	2	...	...	...	...
<b>Totals, All Ages.....</b>	<b>125,834</b>	<b>6,657</b>	<b>5,644</b>	<b>138,135</b>	<b>91.1</b>	<b>4.8</b>	<b>4.1</b>	<b>100.0</b>
Average ages..... yrs.	22.7	50.3	34.8	24.5	...	...	...	...
Median ages..... “	21.2	50.6	33.3	21.5	...	...	...	...

<sup>1</sup> The ages below and above which half of the marriages occurred.

## 28.—Brides and Bridegrooms, by Age and Marital Status, 1964—concluded

Age Group	BRIDEGROOMS							
	Numbers				Percentages			
	Bachelors	Widowers	Divorced	Total	Bachelors	Widowers	Divorced	Total
15—19 years.....	9,073	1	1	9,075	7.2	--	--	6.6
20—24 ".....	69,759	36	246	70,041	55.2	0.6	4.1	50.7
25—29 ".....	30,519	129	1,054	31,702	24.2	2.2	17.4	23.0
30—34 ".....	9,328	234	1,326	10,888	7.4	4.0	21.9	7.9
35—39 ".....	3,742	314	1,044	5,100	3.0	5.4	17.3	3.7
40—44 ".....	1,706	432	910	3,048	1.4	7.4	15.1	2.2
45—49 ".....	865	544	656	2,065	0.7	9.4	10.9	1.5
50—54 ".....	546	728	399	1,673	0.4	12.5	6.6	1.2
55—59 ".....	351	825	218	1,394	0.3	14.2	3.6	1.0
60—64 ".....	200	791	127	1,118	0.2	13.6	2.1	0.8
65 years or over.....	181	1,783	64	2,028	0.1	30.7	1.1	1.5
<b>Totals, Stated Ages.....</b>	<b>126,270</b>	<b>5,817</b>	<b>6,045</b>	<b>138,132</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Age not stated.....	2	1	—	3	...	...	...	...
<b>Totals, All Ages.....</b>	<b>126,272</b>	<b>5,818</b>	<b>6,045</b>	<b>138,135</b>	<b>91.4</b>	<b>4.2</b>	<b>4.4</b>	<b>100.0</b>
Average ages.....yrs.	25.4	56.4	38.5	27.3	...	...	...	...
Median ages <sup>1</sup> ..... "	23.8	58.0	36.9	24.2	...	...	...	...

<sup>1</sup> The ages below and above which half of the marriages occurred.

**Religious Denominations of Brides and Bridegrooms.**—The distribution of brides and bridegrooms by religious denominations is roughly the same as that for the population as a whole. Table 29 shows the very strong influence that religion has on marriage. Nearly 70 p.c. of all marriages are between persons of the same religious denomination; in 1964 among those of Jewish faith it was about 90 p.c.; among Roman Catholics about 87 p.c.; United Church about 59 p.c.; and Eastern Orthodox about 70 p.c.

## 29.—Marriages by Religious Denominations of Contracting Parties, 1964

Denomination of Bridegroom	Denomination of Bride										Total Marriages	P.C. of Grooms
	Angli-can	Bap-tist	East-ern Ortho-dox	Jew-ish	Luth-eran	Pres-byter-ian	Roman Catho-lic <sup>1</sup>	United Church	Other Sects	Not Stated		
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.		
Anglican.....	7,776	568	100	22	404	588	2,302	3,528	640	2	15,930	11.5
Baptist.....	634	2,066	22	2	106	171	504	912	283	—	4,700	3.4
Eastern Orthodox.....	129	35	1,946	4	89	31	411	227	66	—	2,938	2.1
Jewish.....	31	5	8	1,362	7	7	63	29	34	1	1,547	1.1
Lutheran.....	552	126	77	7	1,902	160	908	1,033	336	1	5,102	3.7
Presbyterian.....	779	199	19	8	130	1,601	655	1,143	206	—	4,740	3.4
Roman Catholic <sup>1</sup> .....	2,284	457	212	25	713	576	57,543	2,949	1,072	6	65,837	47.7
United Church.....	3,514	865	161	15	828	974	2,978	15,341	1,070	6	25,752	18.6
Other sects.....	844	344	76	18	352	228	1,269	1,482	6,928	2	11,543	8.4
Not stated.....	5	3	—	—	3	2	8	10	7	8	46	...
<b>Totals.....</b>	<b>16,548</b>	<b>4,668</b>	<b>2,621</b>	<b>1,463</b>	<b>4,534</b>	<b>4,338</b>	<b>66,641</b>	<b>26,654</b>	<b>10,642</b>	<b>26</b>	<b>138,135</b>	<b>100.0</b>
P.C. of brides.....	12.0	3.4	1.9	1.1	3.3	3.1	48.2	19.3	7.7	...	100.0	69.8 <sup>2</sup>

<sup>1</sup> Includes Greek Catholic denomination.

<sup>2</sup> Percentage of marriages between contracting parties of the same religious



## Subsection 2.—Divorces

Before World War I the number of divorces granted in Canada represented less than one per 1,000 of the yearly number of marriages. After that War, however, there was a definite upward trend; the number advanced to 8,213 in 1947, declined gradually to a postwar low of 5,270 in 1951 and since then has again moved sharply upward; the 1965 preliminary figure of 8,941 was the highest on record.

## 30.—Dissolutions of Marriage (Divorces), by Province, 1941-65

NOTE.—Figures for individual years from 1900 to 1953 are given in the 1956 Year Book, p. 230, and for 1954-61 in the 1965 edition, pp. 263-264.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada
NUMBERS											
Av. 1941-45.....	..	2	92	104	99	1,398	305	207	432	937	3,576
" 1946-50.....	..	21	185	245	303	2,839	500	383	724	1,676	6,877
" 1951-55.....	5	10	212	167	327	2,430	356	231	612	1,461	5,811
" 1956-60.....	5	4	227	194	403	2,801	315	247	788	1,514	6,498
1962.....	—	5	229	181	—	3,140	339	281	1,084	1,490	6,768 <sup>1</sup>
1963.....	8	8	271	172	491	3,237	369	331	1,268	1,516	7,686 <sup>2</sup>
1964.....	7 <sup>4</sup>	5	315	210	834 <sup>4</sup>	3,508	418	315	1,389	1,596	8,623 <sup>3</sup>
1965 <sup>5</sup> .....	3	16	323	237	226	4,054	443	312	1,348	1,961	8,941 <sup>5</sup>
RATES PER 100,000 POPULATION											
Av. 1941-45.....	..	2.2	15.4	22.4	2.9	35.8	42.0	24.4	54.3	104.8	30.3
" 1946-50.....	..	22.1	29.7	49.3	8.0	66.4	66.8	45.9	84.6	155.8	53.0
" 1951-55.....	1.3	9.8	32.0	31.4	7.6	49.2	44.0	26.9	60.3	116.8	39.1
" 1956-60.....	1.2	4.0	32.0	33.9	8.2	48.4	35.9	27.6	65.3	99.8	38.2
1962.....	—	4.7	30.7	29.8	—	49.5	36.3	30.2	79.1	89.8	36.4 <sup>1</sup>
1963.....	1.7	7.5	35.8	28.0	9.0	50.2	38.8	35.5	90.2	89.4	40.7 <sup>2</sup>
1964.....	1.4 <sup>4</sup>	4.7	41.4	34.0	15.0 <sup>4</sup>	53.3	43.6	33.4	97.0	91.8	44.8 <sup>3</sup>
1965 <sup>5</sup> .....	0.6	14.8	42.4	38.0	4.0	60.2	46.0	32.8	92.9	109.6	45.7 <sup>5</sup>

<sup>1</sup> Includes 14 in Yukon Territory and five in the Northwest Territories.

<sup>2</sup> Includes 13 in Yukon Territory and two in the Northwest Territories.

<sup>3</sup> Includes 24 in Yukon Territory and two in the Northwest Territories.

<sup>4</sup> Includes Bills of Divorce passed by the House of Commons during the 1964-65 Session of Parliament.

<sup>5</sup> Includes 12 in Yukon Territory and six in the Northwest Territories.

## Section 6.—Canadian Life Tables

Five official series of life tables for Canada and the provinces and regions have been published to date, based on deaths in the three-year period around each of the Censuses of 1931, 1941, 1951, 1956 and 1961. The life table values for 1961 are given in abbreviated form in Table 31.

Life tables give some measure of the health and general conditions of survival of an 'artificial' population in a conventional, standard form. A hypothetical number (100,000) of births of each sex is assumed as a starting point. The life tables show how, on the basis of the mortality rates at each age in the given years, these 100,000 of each sex are reduced in number by death. For example, during the year 1961, of 100,000 males born, 3,058 would have died in their first year, according to the mortality rates in effect during the period 1960-62, so that 96,942 would survive to one year of age; 179 would have died in their second year so that 96,763 survived to two years of age, and so on. At 100 years of age only 105 of the original 100,000 would have survived. The probability of death at each age is the ratio between the number of deaths and the population at each age. Finally, the expectation of life is the number of years which a person on the average might expect to live if the mortality rates in the given years remained constant throughout his lifetime.

Mortality rates at all ages for males have been almost consistently higher than for females. Males have the highest risk of mortality as compared with females during their first year of life, from their late teens to early 30s and from age 50 to 65. For both boys and girls the risk of mortality drops rapidly during childhood and is lowest at about age 10, increases gradually to about age 40 for males and about 50 for females and then rises steeply with advancing age. As an illustration of the information available from study of the life tables, it may be observed that at the mortality rates given in the 1961 life table (see Table 31) about 12,100 males would have died before reaching age 50 as compared with about 7,600 females; only 57,517 of the original group of 100,000 males would have survived to age 70 as compared with 72,746 females.

31.—Canadian Life Table, 1961

Age	Males				Females			
	Number Living at Each Age	Number Dying Between Each Age and the Next	Probability of Dying Before Reaching Next Birthday	Expectation of Life	Number Living at Each Age	Number Dying Between Each Age and the Next	Probability of Dying Before Reaching Next Birthday	Expectation of Life
				yrs.				yrs.
At birth.....	100,000		.03058	68.35	100,000		.02387	74.17
1 year.....	96,942	3,058	.00185	69.50	97,613	2,387	.00164	74.98
2 years.....	96,763	179	.00114	68.63	97,453	160	.00096	74.11
3 ".....	96,653	110	.00099	67.71	97,359	94	.00071	73.18
4 ".....	96,557	96	.00083	66.78	97,290	69	.00061	72.23
5 ".....	96,477	80	.00073	65.83	97,231	59	.00053	71.27
10 ".....	96,185	292	.00050	61.02	97,035	196	.00029	66.41
15 ".....	95,903	282	.00089	56.20	96,888	147	.00040	61.51
20 ".....	95,348	555	.00153	51.51	96,659	229	.00055	56.65
25 ".....	94,577	771	.00157	46.91	96,378	281	.00064	51.80
30 ".....	93,867	710	.00150	42.24	96,045	333	.00079	46.98
35 ".....	93,109	758	.00193	37.56	95,612	433	.00115	42.18
40 ".....	92,061	1,048	.00282	32.96	94,958	654	.00174	37.45
45 ".....	90,486	1,575	.00465	28.49	93,966	992	.00277	32.82
50 ".....	87,896	2,590	.00772	24.25	92,394	1,572	.00436	28.33
55 ".....	83,797	4,099	.01265	20.30	90,000	2,394	.00675	24.01
60 ".....	77,546	6,251	.01999	16.73	86,387	3,613	.01064	19.90
65 ".....	68,774	8,772	.02972	13.53	80,916	5,471	.01718	16.07
70 ".....	57,517	11,257	.04467	10.67	72,746	8,170	.02774	12.58
75 ".....	43,791	13,726	.06706	8.21	61,052	11,694	.04664	9.48
80 ".....	28,936	14,855	.10091	6.14	45,161	15,891	.07941	6.90
85 ".....	15,271	13,665	.15231	4.46	26,884	18,277	.13118	4.89
90 ".....	5,647	9,624	.22712	3.16	11,262	15,622	.20708	3.39
95 ".....	1,196	4,451	.33123	2.20	2,723	8,539	.31226	2.32
100 ".....	105	1,091	.47051	1.49	278	2,445	.45185	1.56

By 1961, life expectancy *at birth* in Canada had reached a new high point of 68.4 years for males and about 74.2 for females—comparable to the expectancy for other countries of the world with highly developed programs of medical and public health care. Once a child has passed its first year of life, however, its life expectancy increases appreciably. At one year of age a male child *at present mortality risks* may, on the average, expect to live an additional 69.5 years and a female almost 75 years, representing for an infant boy a gain of 1.2 years over his expectation at birth and for an infant girl a gain of 0.8 years. The expectation of life of a 15-year-old boy is 56.2 additional years; of a 15-year-old girl 61.5 years. At 25 years of age the expectation is about 46.9 years for men and 51.8 years for women and at age 70, 10.7 years for men and 12.6 years for women.

Table 32 summarizes the life expectancy figures extracted from the Canadian life tables for 1931, 1941, 1951, 1956 and 1961. According to these figures, life expectancy at birth for men increased about three quarters of a year between 1956 and 1961 and 1.3 years between 1951 and 1956, compared with 3.4 years from 1941 to 1951 and 2.9 years from 1931 to 1941; females gained one and one quarter years between 1956 and 1961 and 2.1 years between 1951 and 1956, compared with 4.5 years and 4.2 years, respectively, in the preceding decades. Thus, from 1931 to 1961 a total of 8.4 years was added to male life expectancy and 12.1 years to female longevity.

The increases in life expectancy have been predominantly at the younger ages, particularly in infancy, and diminish with advanced age. For example, from 1931 to 1961, 3.5 years were added to the life expectancy of a five-year-old male, 2.5 years to a 20-year-old, about one year to a 40-year-old and about half a year to a 60-year-old as compared with 8.4 years for a newborn male. During this period, life expectancy for a five-year-old female gained 8.1 years, for a 20-year-old 6.9 years, for a 40-year-old 4.4 years and for a 60-year-old two and three quarter years as compared with 12.1 years for a newborn female.

Longevity improved for both sexes, though more so and at all ages for females, but there was only slight improvement for males beyond middle life. Briefly, the rapid decline in the death rate for infants of both sexes is continuing but the declines are slower with advancing age, so that relatively stationary death rates were established from about 50 years onward for males and from about 80 years onward for females.

The fact that such a pattern exists is important in interpreting the results of these life tables. The arbitrary population base of 100,000 of each sex in the 1956 tables, for example, was subjected to the mortality rates in effect in 1960-62, and the life expectancy computed as *if those death rates at each age were to prevail during their lifetime*. Actually the theoretical 200,000 infants born in 1960-62 will most probably have a pattern of survival and life expectancy quite different from that of the present life tables as they will spend most of their lives under conditions of public health and medical care which in all likelihood will be superior to those prevailing in 1960-62.

The improvement in life expectancy, particularly among children and adolescents, was caused mainly by the substantial reduction in recent years in mortality from infectious diseases; on the other hand, diseases associated with middle and old age are much less amenable to control. It is therefore unlikely that improvement in life expectancy in the future will be comparable to that of the past 30 years. As approximately 9 p.c. of deaths in 1960-62 occurred among infants and another 77 p.c. among persons over age 50, any additional improvement must come as the result of further declines in mortality from conditions associated with childbirth and early infancy, further control of infectious diseases, prevention of accidents, and advances in combating diseases associated with middle and old age, such as cardiovascular-renal conditions and cancer.



## 32.—Expectation of Life, 1931, 1941, 1951, 1956 and 1961

Age	1931		1941		1951		1956		1961	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.
At birth.....	60.00	62.10	62.96	66.30	66.33	70.83	67.61	72.92	68.35	74.17
1 year.....	64.69	65.71	66.14	68.73	68.33	72.33	69.04	73.99	69.50	74.98
2 years.....	64.46	65.42	65.62	68.16	67.56	71.55	68.21	73.15	68.63	74.11
3 ".....	63.84	64.75	64.88	67.38	66.68	70.66	67.31	72.24	67.71	73.18
4 ".....	63.11	63.99	64.07	66.56	65.79	69.74	66.38	71.31	66.78	72.23
5 ".....	62.30	63.17	63.22	65.69	64.86	68.80	65.45	70.35	65.83	71.27
10 ".....	57.96	58.72	58.70	61.08	60.15	64.02	60.67	65.51	61.02	66.41
15 ".....	53.41	54.15	54.06	56.36	55.39	59.19	55.86	60.64	56.20	61.51
20 ".....	49.05	49.76	49.57	51.76	50.76	54.41	51.19	55.80	51.51	56.65
25 ".....	44.83	45.54	45.18	47.26	46.20	49.67	46.61	50.97	46.91	51.80
30 ".....	40.55	41.38	40.73	42.81	41.60	44.94	41.98	46.17	42.24	46.98
35 ".....	36.23	37.19	36.26	38.37	37.00	40.24	37.34	41.40	37.56	42.18
40 ".....	31.98	33.02	31.87	33.99	32.45	35.63	32.74	36.69	32.96	37.45
45 ".....	27.79	28.87	27.60	29.67	28.05	31.14	28.28	32.09	28.49	32.82
50 ".....	23.72	24.79	23.49	25.46	23.88	26.80	24.04	27.65	24.25	28.33
55 ".....	19.88	20.84	19.64	21.42	20.02	22.61	20.12	23.38	20.30	24.01
60 ".....	16.29	17.15	16.06	17.62	16.49	18.64	16.54	19.34	16.73	19.90
65 ".....	12.98	13.72	12.81	14.08	13.31	14.97	13.36	15.60	13.53	16.07
70 ".....	10.06	10.63	9.94	10.93	10.41	11.62	10.51	12.17	10.67	12.58
75 ".....	7.57	7.98	7.48	8.19	7.89	8.73	7.98	9.15	8.21	9.48
80 ".....	5.61	5.92	5.54	6.03	5.84	6.38	5.89	6.75	6.14	6.90
85 ".....	4.10	4.38	4.05	4.35	4.27	4.57	4.27	4.97	4.46	4.89
90 ".....	2.97	3.24	2.93	3.12	3.10	3.24	3.07	3.67	3.16	3.39
95 ".....	2.14	2.40	2.09	2.26	2.24	2.27	2.18	2.74	2.20	2.32
100 ".....	1.53	1.77	1.46	1.64	1.60	1.59	1.52	2.05	1.49	1.56

Table 33 shows provincial or regional life expectancy for males and females at selected ages. According to the 1961 figures, male life expectancy at birth continues to be below 70 and that for females above 72 in all of the five regions. During the period 1931-61, life expectancy at birth for males increased from 60.00 to 68.35, or 8.35 years, varying from 6.32 years for the Prairie Provinces to 11.09 years for Quebec; life expectancy at birth for females rose from 62.10 to 74.17, or 12.07 years, varying from 10.08 years for British Columbia to 14.97 years for Quebec. Quebec showed the greatest improvement of any region among young males and females and middle-aged females, and British Columbia recorded the greatest improvement among middle-aged males.

### 33.—Expectation of Life at Selected Ages, by Province or Region, 1931, 1941, 1951, 1956 and 1961

Province or Region and Age	1931		1941		1951		1956		1961	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.
<b>Atlantic Provinces—<sup>1</sup></b>										
At birth.....	60.20	61.91	61.69	64.63	66.57	70.50	67.91	72.89	68.58	73.92
1 year.....	64.76	65.44	65.68	67.78	69.08	72.41	69.68	74.23	70.06	75.10
20 years.....	49.22	49.62	49.36	51.33	51.59	54.52	51.95	56.01	52.17	56.82
40 years.....	32.73	33.70	32.22	34.19	33.48	35.99	33.58	37.03	33.76	37.70
65 years.....	13.63	14.59	13.13	14.50	13.90	15.42	13.95	15.91	14.16	16.35
<b>Quebec—</b>										
At birth.....	56.19	57.80	60.18	63.07	64.42	68.58	66.13	71.02	67.28	72.77
1 year.....	62.45	62.62	64.45	66.28	67.19	70.71	68.11	72.56	68.71	73.80
20 years.....	47.77	47.73	48.38	49.85	49.76	52.92	50.36	54.43	50.82	55.54
40 years.....	31.04	31.75	30.94	32.72	31.54	34.36	31.91	35.42	32.29	36.38
65 years.....	12.60	13.15	12.44	13.41	12.81	14.17	12.88	14.73	13.16	15.27
<b>Ontario—</b>										
At birth.....	61.30	63.92	64.55	68.43	66.87	71.85	67.80	73.57	68.32	74.40
1 year.....	65.05	66.84	66.74	70.07	68.34	72.91	68.76	74.25	69.14	74.95
20 years.....	48.79	50.13	49.57	52.40	50.58	54.76	50.81	55.95	51.03	56.53
40 years.....	31.56	32.90	31.54	34.11	32.03	35.75	32.24	36.74	32.35	37.27
65 years.....	12.67	13.47	12.63	14.03	13.07	14.92	12.97	15.56	13.05	15.90
<b>Prairie Provinces—</b>										
At birth.....	63.47	65.49	65.43	68.19	68.36	72.28	69.26	74.18	69.79	75.66
1 year.....	67.24	68.30	68.02	70.22	69.90	73.43	70.48	75.06	70.96	76.40
20 years.....	50.98	51.68	51.28	53.08	52.24	55.53	52.55	56.88	52.90	58.08
40 years.....	33.34	34.35	33.32	34.96	32.86	36.63	34.12	37.71	34.37	38.83
65 years.....	13.60	14.40	13.35	14.62	13.88	15.51	14.01	16.20	14.22	17.00
<b>British Columbia—</b>										
At birth.....	62.15	65.34	63.65	68.96	66.73	72.37	68.14	73.91	68.94	75.42
1 year.....	64.55	67.16	65.40	70.17	67.97	73.32	69.19	74.68	69.83	76.00
20 years.....	48.68	51.18	48.99	53.09	50.41	55.51	51.32	56.52	51.85	57.61
40 years.....	32.17	34.27	31.70	35.14	22.45	36.72	33.11	37.49	33.56	38.46
65 years.....	13.36	14.60	12.96	14.83	13.50	15.86	13.72	16.15	13.98	16.94

<sup>1</sup> Figures for 1931 and 1941 are exclusive of Newfoundland.

## Section 7.—International Comparisons of Vital Statistics

Table 34 gives a summary of Canada's national and provincial vital statistics rates along with those of several other countries. It will be noted that among the countries listed the low crude death rate in Canada is bettered by three countries—Japan, Union of Soviet Socialist Republics and Venezuela—and that some of the provinces have lower rates than most other countries. The birth rate also helps to give Canada one of the fastest growing populations, currently ranking eighth among those listed. However, 12 countries reported lower rates of infant mortality, some as low as 15 per 1,000 live births (Sweden and Netherlands), as compared with Canada's rate of 24.7.

## 34.—Principal Vital Statistics Rates of Selected Countries, 1961

Note.—Countries are ranked according to the highest rates for births, marriages and natural increase and according to the lowest for deaths.

Source: United Nations publications.

Country or Province	Births		Deaths		Infant Mortality		Neonatal Mortality <sup>1</sup>		Maternal Mortality		Marriages		Natural Increase	
	Rate <sup>2</sup>	Rank	Rate <sup>2</sup>	Rank	Rate <sup>3</sup>	Rank	Rate <sup>3</sup>	Rank	Rate <sup>4</sup>	Rank	Rate <sup>3</sup>	Rank	Rate <sup>2</sup>	Rank
Australia.....	20.6	15	9.0	12	19.1	7	14.3 <sup>s</sup>	8	2.7 <sup>s</sup>	6	7.7	13	11.6	14
Austria.....	18.6	21	12.3	30	20.9	21	20.2	21	6.0 <sup>s</sup>	18	8.0	9	6.3	28
Belgium.....	17.1	29	12.1	29	27.2	18	17.6 <sup>s</sup>	14	3.3 <sup>s</sup>	9	6.9	24	5.0	30
<b>Canada.....</b>	<b>23.5</b>	<b>8</b>	<b>7.6</b>	<b>4</b>	<b>24.7</b>	<b>13</b>	<b>17.3</b>	<b>13</b>	<b>3.0</b>	<b>8</b>	<b>7.2</b>	<b>21</b>	<b>15.9</b>	<b>5</b>
Newfoundland.....	29.9	...	6.2	...	31.1	...	18.9	...	4.1	...	0.9	...	23.7	...
Prince Edward Island.....	25.5	...	8.4	...	26.4	...	15.8	...	...	...	7.2	...	16.3	...
Nova Scotia.....	24.1	...	8.4	...	25.3	...	16.7	...	4.9	...	0.9	...	15.7	...
New Brunswick.....	24.9	...	7.7	...	26.1	...	16.6	...	6.5	...	7.0	...	15.7	...
Quebec.....	23.5	...	7.7	...	27.4	...	19.5	...	3.8	...	7.5	...	17.2	...
Ontario.....	23.2	...	7.9	...	21.3	...	15.7	...	2.8	...	7.1	...	16.7	...
Manitoba.....	22.7	...	8.1	...	25.5	...	16.9	...	1.8	...	7.4	...	15.3	...
Saskatchewan.....	24.1	...	7.8	...	26.0	...	17.7	...	2.2	...	7.1	...	14.6	...
Alberta.....	25.3	...	6.6	...	23.9	...	17.0	...	2.2	...	6.8	...	16.3	...
British Columbia.....	20.7	...	9.2	...	22.8	...	15.3	...	0.6	...	7.4	...	18.7	...
Yukon Territory.....	32.1	...	5.4	...	38.9	...	17.5	...	...	...	7.0	...	11.5	...
Northwest Territories.....	50.6	...	8.6	...	69.5	...	27.5	...	...	...	5.9	...	26.7	...
Chile.....	33.7 <sup>s</sup>	3	12.0 <sup>s</sup>	28	111.0 <sup>s</sup>	30	37.3 <sup>s</sup>	28	29.1 <sup>s</sup>	27	6.9 <sup>s</sup>	24	42.0	3
Denmark.....	17.6	27	9.0	18	18.7	6	14.8 <sup>s</sup>	9	2.1 <sup>s</sup>	3	8.4	8	7.7	24
England and Wales.....	18.4	23	11.3	25	20.0	5	13.8	6	2.6	5	7.6	15	7.1	27
Finland.....	17.6	24	9.3	13	16.9	4	13.7	7	3.0 <sup>s</sup>	15	7.5	16	8.3	21
France.....	18.1	24	10.8	23	22.4	11	16.0	10	3.8 <sup>s</sup>	12	7.2	21	7.3	26
Germany, Federal Republic of.....	18.5	22	10.8	23	22.3	15	18.9	18	8.3 <sup>s</sup>	20	8.6	6	7.7	24
India <sup>s</sup> .....	20.3 <sup>s</sup>	16	8.6 <sup>s</sup>	7	77.6 <sup>s</sup>	28	...	...	...	...	...	...	11.7 <sup>s</sup>	13
Ireland.....	22.5	10	11.4	26	26.8	17	18.1	16	4.4	14	5.6	27	11.1	17
Italy.....	19.9	18	8.8	9	35.5	23	22.9 <sup>s</sup>	23	9.8 <sup>s</sup>	23	5.0	9	11.1	17
Japan.....	17.7	25	6.0	31	20.0	5	13.8	6	2.6	5	7.6	15	7.1	27
Mexico.....	45.4	1	10.3	21	27.4	10	12.4	25	10.2 <sup>s</sup>	24	9.9	2	10.8	19
Netherlands.....	20.7	14	7.7	5	67.7 <sup>s</sup>	26	26.8 <sup>s</sup>	25	19.3 <sup>s</sup>	26	7.1	23	35.1	2
Northern Ireland.....	24.1	7	8.9	8	14.8	1	11.6	1	3.3 <sup>s</sup>	9	8.5	7	13.0	11
New Zealand.....	23.6	7	10.5	22	19.1	1	12.8 <sup>s</sup>	5	4.0 <sup>s</sup>	13	8.0	9	15.3	6
Norway.....	17.7	25	9.5	22	26.3	16	18.3	17	1.5	1	7.3	20	13.1	10
Peru.....	27.7 <sup>s</sup>	4	8.3 <sup>s</sup>	6	16.7	3	12.0 <sup>s</sup>	2	2.0 <sup>s</sup>	2	6.5	26	8.2	23
Portugal.....	27.7 <sup>s</sup>	4	10.2	26	64.8 <sup>s</sup>	29	35.3 <sup>s</sup>	27	8.8 <sup>s</sup>	21	8.0	9	19.4 <sup>s</sup>	4
Scotland.....	23.7	17	11.7	27	20.0	5	16.4	24	2.3	4	7.7	13	8.3	21
Spain.....	22.2	11	8.7	8	29.6 <sup>11</sup>	20	19.2 <sup>11</sup>	12	5.4 <sup>s</sup>	16	7.4	13	13.5	8
Sweden.....	19.0	30	10.0	19	15.4 <sup>s</sup>	2	12.3 <sup>s</sup>	3	2.7 <sup>s</sup>	6	7.5	16	6.0	29
Switzerland.....	16.2	20	9.4	14	19.0	6	16.1 <sup>s</sup>	11	5.7 <sup>s</sup>	17	9.1 <sup>s</sup>	16	9.8	20
Union of Soviet Socialist Republics.....	23.5 <sup>s</sup>	8	8.9 <sup>s</sup>	11	23.0 <sup>s</sup>	19	18.9 <sup>s</sup>	18	6.1 <sup>s</sup>	19	10.0 <sup>s</sup>	3	14.6 <sup>s</sup>	7
South Africa (Whites).....	19.6	19	6.9	1	30.9 <sup>s</sup>	22	17.9	15	3.3	9	9.0	4	12.7	12
United States.....	21.0	12	9.4	14	24.8	14	22.8 <sup>s</sup>	22	9.5 <sup>s</sup>	22	5.2 <sup>s</sup>	28	36.2 <sup>s</sup>	1
Venezuela.....	43.4 <sup>s</sup>	2	7.2 <sup>s</sup>	3	47.9 <sup>s</sup>	24	33.9 <sup>s</sup>	26	16.0 <sup>s</sup>	25	8.7	5	11.4	16
Yugoslavia.....	20.8	13	9.4	14	76.0	2.7	...	...	...	...	...	...	...	...

<sup>1</sup> Under 28 days unless otherwise stated.

<sup>2</sup> Per 1,000 population.

<sup>3</sup> Per 1,000 live births.

<sup>4</sup> Per 10,000 live births.

<sup>5</sup> 1960.

<sup>6</sup> Registration area only.

<sup>7</sup> 1961.

<sup>8</sup> Excluding children born alive but dead before registration of their birth.

<sup>9</sup> 1963.

<sup>10</sup> 1959.

<sup>11</sup> 1962.



# CHAPTER VI.—PUBLIC HEALTH, WELFARE AND SOCIAL SECURITY\*

## CONSPECTUS

	PAGE		PAGE
<b>Part I.—Public Health.....</b>	279	<b>SECTION 2. FEDERAL-PROVINCIAL PROGRAMS.....</b>	314
SECTION 1. FEDERAL HEALTH ACTIVITIES..	279	Subsection 1. Canada Assistance Plan...	314
Subsection 1. Medicare and the Health Resources Fund.....	279	Subsection 2. Old Age Assistance.....	315
Subsection 2. National Health Grant Program.....	280	Subsection 3. Allowances for Blind Persons.....	316
Subsection 3. Hospital Insurance.....	281	Subsection 4. Allowances for Disabled Persons.....	317
Subsection 4. Food and Drug Control...	285	Subsection 5. Unemployment Assistance.	317
Subsection 5. Medical Services.....	286	Subsection 6. Fitness and Amateur Sport Program.....	318
Subsection 6. Radiation Protection.....	287	Subsection 7. National Welfare Grant Program.....	319
Subsection 7. Health Research and International Health.....	288	Subsection 8. Vocational Rehabilitation..	319
Subsection 8. Consultative and Technical Services.....	289	<b>SECTION 3. PROVINCIAL WELFARE PROGRAMS</b>	320
<b>SECTION 2. PROVINCIAL AND LOCAL HEALTH SERVICES.....</b>	290	Subsection 1. General Assistance.....	321
Subsection 1. Provincial Preventive Public Health Services.....	290	Subsection 2. Mothers' Allowances.....	321
Subsection 2. Local Preventive Public Health Services.....	291	Subsection 3. Living Accommodation for Elderly Persons.....	322
Subsection 3. Services for Specific Diseases or Disabilities.....	292	Subsection 4. Child Welfare Services....	323
Subsection 4. Public Medical Care.....	293	<b>SECTION 4. INTERNATIONAL WELFARE.....</b>	324
Subsection 5. Services for the Disabled and Chronically Ill.....	296	<b>Part III.—Health and Social Welfare Expenditures.....</b>	324
<b>SECTION 3. HOSPITAL AND OTHER HEALTH STATISTICS.....</b>	297	<b>SECTION 1. GOVERNMENT EXPENDITURES ON HEALTH AND SOCIAL WELFARE.....</b>	324
Subsection 1. Hospital Statistics.....	297	<b>SECTION 2. EXPENDITURES ON PERSONAL HEALTH CARE.....</b>	327
Subsection 2. Notifiable Diseases and Other Health Statistics.....	305	<b>Part IV.—National Voluntary Health and Welfare Activities.....</b>	328
Subsection 3. Numbers of Physicians and Earnings of Those in Private Practice.	307	<b>Part V.—Veterans Services.....</b>	329
<b>Part II.—Public Welfare and Social Security.....</b>	309	<b>SECTION 1. PENSIONS AND ALLOWANCES....</b>	329
<b>SECTION 1. FEDERAL GOVERNMENT PROGRAMS.....</b>	309	<b>SECTION 2. WELFARE SERVICES.....</b>	332
Subsection 1. Canada Pension Plan.....	309	<b>SECTION 3. TREATMENT SERVICES.....</b>	334
Subsection 2. Old Age Security.....	312	<b>SECTION 4. LAND SETTLEMENT AND HOUSE CONSTRUCTION.....</b>	335
Subsection 3. Family Allowances.....	312	<b>SECTION 5. COMMONWEALTH WAR GRAVES COMMISSION.....</b>	336
Subsection 4. Youth Allowances.....	313		

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

Canada's growth in recent years has intensified many problems in the planning of health and welfare services and has shifted the emphasis toward new approaches and new programs. General prosperity, growing urbanization and industrialization, larger numbers of children and older persons in the population, and new concepts and knowledge in health and welfare matters have all contributed to needs for additional services.

\* Except where otherwise indicated, this Chapter was prepared (July 1966) by the Research and Statistics Division of the Department of National Health and Welfare, Ottawa.

A number of important developments took place or were under consideration in this area during 1965-66. With the April 1965 Throne Speech, Canada embarked on its "War on Poverty", a program for the full utilization of human resources and the elimination of poverty; planned measures included an expansion of the Area Development Program (ADA) and the Agricultural Rehabilitation and Development Program (ARDA), measures to assist the re-employment, relocation and retraining of workers, urban renewal measures, the establishment of a Company of Young Canadians to undertake projects for economic and social development in Canada and abroad, and the establishment of a Canada Assistance Plan. These measures and related matters were discussed at the federal-provincial conference on poverty and opportunity held in Ottawa in December 1965 and several of them were later formally undertaken.

The first Canadian Conference on Aging, sponsored by the Canadian Welfare Council and held in Toronto in January 1966, sought ways and means of improving the life of older people. Delegates represented labour, management, professional organizations, voluntary organizations and the churches. The report of the Special Committee of the Senate on Aging, released in February 1966, recommended a guaranteed income for older people, improvements in housing, health and institutional care, social services, community participation, recreation programs, and the establishment of a national commission on aging.

The Act to establish the Canada Pension Plan (SC 1964-65, c. 51), which was given Royal Assent on Apr. 3, 1965 and became operational on Jan. 1, 1966, established for the first time in Canada a comprehensive social insurance program of contributory, old age, disability and survivors' pensions. The legislation provides an earnings-related old age pension and adjusts the existing tax-financed flat-rate old age security pension so that the two programs form an integrated system. It also provides a program of supplementary pensions and benefits for disabled contributors and their dependent children, and survivors of contributors.

The Province of Quebec established the Quebec Pension Plan, which came into operation on Jan. 1, 1966. The Canada Pension Plan does not operate in Quebec because the legislation provides that the plan will not be operative in a province that establishes its own comparable program. It is significant that both the Parliament of Canada and that of Quebec have passed almost identical legislation in this field. The two plans are to be so closely co-ordinated that a person may contribute under one plan or the other, or to both plans interchangeably, during his contributory period and receive the same benefits as if he had contributed to one plan throughout this period. The introduction of the Canada and Quebec Pension Plans emphasized the need for uniform private pension legislation across Canada. Ontario amended the Ontario Pension Benefits Act with effect from July 30, 1965, and in Quebec the Supplemental Pension Plans Act was given Royal Assent on July 15, 1965. Both Acts regulate private pension plans, ensure portability and solvency of the private plans and require the provision of information to the members of the plan.

An amendment to the Old Age Security Act lowered the eligible age, provided for adjustment of the amount of the pension for increases in the cost of living, and eased residence requirements.

The Canada Assistance Act, which was given Royal Assent on July 14, 1966, provides for a comprehensive welfare system to replace the categorical programs of old age assistance, blind and disabled persons' allowances and unemployment assistance; extends existing social assistance and welfare coverage; and substitutes a needs test for a test of means as a qualification for assistance. Provincial programs for persons in need, including health care services, will be financially supported by federal-provincial cost-sharing arrangements.

In the health field, the federal Medical Care Act providing for the setting up of a comprehensive medical care insurance program was given first reading on July 12, 1966; further debate was postponed until October. On Sept. 1, 1965, the British Columbia Medical Plan

took effect and on July 1, 1966 the Ontario Medical Services Insurance Plan and the Alberta Health Program (an extension of the former Alberta Medical Plan) began paying benefits. These three provincial plans are voluntary and involve subsidization of premiums for low-income groups.

Supplementing the proposed federal medical program, a Health Resources Fund of \$500,000,000 was provided under the Health Resources Fund Act (SC 1966, c. 42) to assist the provinces in the construction and equipping of facilities for health research and training.

## PART I.—PUBLIC HEALTH

Provincial governments bear the major responsibility for health services in Canada, with the municipality often assuming considerable authority over matters delegated to it by provincial legislation. The Federal Government has jurisdiction over a number of health matters of a national character and provides important financial assistance to provincial health and hospital services. All levels of government are aided and supported by a network of voluntary agencies working in different health fields.

### Section 1.—Federal Health Activities

The Department of National Health and Welfare is the chief federal agency in health matters but important treatment programs are also administered by the Departments of Veterans Affairs and National Defence. The Dominion Bureau of Statistics is responsible for collection, analysis and publication of national health statistics, the Medical Research Council and the Defence Research Board administer medical research programs, and the Canada Department of Agriculture has certain health responsibilities connected with food production.

The Department of National Health and Welfare controls food and drugs, including narcotics, operates quarantine and immigration medical services, carries out international health obligations, and provides health services to Indians, Eskimos and other special groups. It advises on the visual eligibility of applicants for blindness allowances and co-operates with the provinces in the provision of surgical or remedial treatment for recipients of the allowances. Under the Public Works Health Act, supervision of health conditions is provided for persons employed on federal public works. Health counselling and medical supervision are provided for the federal Public Service. The Department also administers the civil aviation medical program for the Department of Transport.

The Department serves the provinces in an advisory and co-ordinating capacity and administers grants to provincial health and national voluntary agencies. Administration of federal aspects of the Hospital Insurance and National Health Grant Programs is a major activity. Co-ordination with the provinces on health matters is facilitated by the Dominion Council of Health, the principal advisory agency to the Minister of National Health and Welfare. Its membership includes the Deputy Minister of National Health, who acts as chairman, the chief health officer of each province, and five appointees of the Governor in Council. The Council meets semi-annually. Federal-provincial technical advisory committees of the Council deal with specific aspects of public health.

#### Subsection 1.—Medicare and the Health Resources Fund

**Medicare.**—Proposals for a plan of comprehensive medical insurance for all Canadians, administered by the provinces and with federal fiscal contributions, were made by the Prime Minister at the federal-provincial conference held in July 1965. The federal contributions would be dependent upon the fulfilment of four criteria by each provincial plan:



(1) that it cover, as a minimum, "all the services provided by physicians, both general practitioners and specialists", except for services available under other legislation and certain limited types of services, such as cosmetic surgery, that are not medically necessary; (2) that it cover all residents, or at least "be aimed at universal coverage", without exclusion because of age, economic circumstances or pre-existing conditions; (3) that it be "publicly administered, either directly by the provincial government or by a provincial government agency"; and (4) that benefits be fully transferable from one province to another. The federal contribution would be half the per capita cost of all insured services in all participating provinces multiplied by the number of insured persons in each participating province. The Medical Care Act embodying these principles was given first reading in the House of Commons on July 12, 1966 and was slated to come before the House again in October.

**Health Resources Fund.**—Supplementing the medicare program, the Prime Minister also proposed at the July 1965 conference the setting up of a Health Resources Fund "to support the construction and equipment of facilities for health research and training". He later announced that the proposed Fund would amount to \$500,000,000 to be expended over a 15-year period commencing in 1966; that, through the Fund, federal capital grants would be available for the construction, renovation and basic equipment of research establishments, teaching hospitals, medical schools and training facilities for other health personnel but that grants would not be available to meet the operating costs of such establishments; and that payments from the Fund would meet 50 p.c. of the cost of construction and basic equipment for the assisted projects.

The operation of the proposed Fund was discussed at the Federal-Provincial Conference of Health Ministers held Jan. 31 and Feb. 1, 1966, when the principle was accepted that, of the \$500,000,000, \$25,000,000 would be provided to the four Atlantic Provinces as special assistance over and above the normal 50-p.c. share, and that a major portion be allocated on a per capita basis; the allocation of the remainder was left for further study. An advisory committee consisting of representatives of federal and provincial Ministers of Health would, it was intended, review over-all provincial submissions concerning individual projects, advise on disbursements from the Fund, and consult with professional bodies for technical advice. Two technical conferences were held (Oct. 21-22, 1965 and Mar. 31-Apr. 1, 1966) to make preliminary and tentative arrangements for the implementation of the program. On July 11, 1966, the Health Resources Fund Act (SC 1966, c. 42) received Royal Assent.

### Subsection 2.—National Health Grant Program

The National Health Grant Program, inaugurated in 1948, makes federal grants available to the provinces for the developing and strengthening of public health and hospital services. Changes were made over the years to provide additional funds, increase flexibility and meet changing circumstances. Some of the headings under which grants had been made were merged or discontinued and new headings were added (see Table 1).

Up to Mar. 31, 1966, aid for hospital construction had been approved for 122,176 beds and 15,359 bassinets for patients, 23,355 beds for nurses, and 917 beds for interns. Approximately 42,000 health workers had been trained or were undergoing special training, and more than 7,000 health workers were employed, with Health Grant assistance. The amount expended in 1965-66 totalled \$45,477,968 or 75.3 p.c. of the total available; over the entire 18 years of the program, 79 p.c. of the available money had been actually spent. If for 1965-66 the \$9,500,000 in fiscal compensation received by Quebec is deducted from the total available, that total is reduced to \$50,880,280 and the expenditure in the remainder of Canada appears as 89.4 p.c. of the available amount.

**1.—Amounts Available and Amounts and Percentages Expended under the National Health Grant Program, by Grant, for the 18-year Period Ended Mar. 31, 1966 and for the Year Ended Mar. 31, 1966.**

Grant	1948-66 Period			Year Ended Mar. 31, 1966		
	Amount Available <sup>1</sup>	Amount Expended	Percentage Expended	Amount Available <sup>1</sup>	Amount Expended	Percentage Expended
	\$	\$		\$	\$	
Crippled Children <sup>2</sup> .....	6,207,728	4,431,677	71	—	—	—
Professional Training.....	17,191,644	15,644,345	91	1,923,700	1,280,025	66
Hospital Construction.....	252,419,132	233,945,344	93	20,367,320	17,622,038	86
Veneral Disease Control <sup>3</sup> .....	5,968,336	5,146,209	86	—	—	—
Mental Health.....	126,734,488	104,502,806	82	8,656,650	5,909,861	68
Tuberculosis Control.....	67,968,562	62,979,909	93	1,923,700	1,719,316	89
Public Health Research.....	18,640,558	16,286,456	87	4,424,510	4,214,560	95
Health Survey <sup>4</sup> .....	645,180	540,960	84	—	—	—
General Public Health.....	173,624,051	121,797,929	70	16,351,450	10,840,170	66
Cancer Control.....	62,489,353	44,957,713	72	1,923,700	1,132,757	59
Laboratory and Radiological Services <sup>5</sup> .....	47,404,300	14,450,881	30	—	—	—
Medical Rehabilitation <sup>6</sup> .....	6,500,000	3,016,750	46	—	—	—
Medical Rehabilitation and Crippled Children <sup>7</sup> .....	16,410,550	10,512,555	64	2,885,550	1,839,477	64
Child and Maternal Health <sup>8</sup> .....	22,173,700	15,076,033	68	1,923,700	919,764	48
<b>Totals.....</b>	<b>824,377,582</b>	<b>653,289,567</b>	<b>79</b>	<b>60,380,280<sup>9</sup></b>	<b>45,477,968<sup>9</sup></b>	<b>75</b>

<sup>1</sup> Amounts as set out in the Orders in Council. <sup>2</sup> Merged with Medical Rehabilitation Grant, Apr. 1, 1960. <sup>3</sup> Absorbed into General Public Health Grant, Apr. 1, 1960. <sup>4</sup> Lapsed in 1953. <sup>5</sup> Introduced in 1953 and absorbed into General Public Health Grant, Apr. 1, 1950. <sup>6</sup> Introduced in 1953 and merged with Crippled Children Grant, Apr. 1, 1960. <sup>7</sup> Amounts for 1960-66 only; see footnotes <sup>2</sup> and <sup>6</sup>. <sup>8</sup> Introduced in 1953. <sup>9</sup> "Amount available" includes, but "amount expended" excludes, an estimated amount of \$9,500,000 that represents Quebec entitlement under the Established Programs (Interim Arrangements) Act.

### Subsection 3.—Hospital Insurance

The federal-provincial hospital insurance program, now established in all provinces and territories, covers 98.7 p.c. of the total population of Canada. This program was introduced under the federal Hospital Insurance and Diagnostic Services Act of 1957, by which the Federal Government shares with the provinces the costs of specified hospital services to insured patients. The choice of methods of financing and administering the program at the provincial level, and the choice of the types of service offered above the minimum stipulated in the Act, rest with the provinces.

Federal legislation covers only services in institutions approved to provide acute, chronic and convalescent care. Tuberculosis and mental hospitals are excluded from the federal-provincial plan, as are institutions providing custodial care. However, the psychiatric and tuberculosis units of general hospitals are included.

The basic range of in-patient benefits that, under the Act, each province is required to provide includes standard ward accommodation and meals, nursing service, drugs and biologicals, surgical supplies, the use of operating and case rooms, diagnostic procedures (including X-ray and laboratory procedures) together with necessary medical interpretations, and the use of radiotherapy and physiotherapy facilities where available. The same benefits for out-patients, although authorized for assistance under the federal legislation, are not mandatory upon provincial plans. All provinces except one provide, under the plan, insured out-patient services. The pattern varies from province to province but among the services offered are emergency care following accidents, diagnostic services and therapeutic services, including minor surgical and medical procedures. Some provinces provide certain psychiatric out-patient services.

Provinces use different methods of administering and financing their programs; money raised through general revenues, provincial sales taxes and personal premiums may be used separately or in combination.\* The Federal Government pays each province 25 p.c. of the per capita cost of in-patient services in Canada as a whole plus 25 p.c. of the per capita cost of in-patient services in the province, multiplied by the average for the year of the number of insured persons in the province. On a national basis, the federal contribution amounts to about 50 p.c. of sharable costs. However, for individual provinces the proportion of sharable costs met by the Federal Government varies, with a higher proportion of the cost of low-cost programs than of high-cost programs being met. Federal payments to the provinces under the program from July 1, 1958 to Dec. 31, 1965 totalled almost \$2,100,000,000. During 1965, federal payments to the individual provinces† and territories totalled \$327,000,000, divided as follows: Newfoundland, \$11,100,000; Prince Edward Island, \$2,300,000; Nova Scotia, \$17,200,000; New Brunswick, \$14,100,000; Ontario, \$162,200,000; Manitoba, \$22,100,000; Saskatchewan, \$24,500,000; Alberta, \$33,400,000; British Columbia, \$38,900,000; Yukon Territory, \$322,000; and the Northwest Territories, \$675,000.

Tables 2 and 3 give data for hospitals listed in the federal-provincial hospital insurance agreements. The bulk of the hospitals listed in those agreements are "budget review" hospitals, which are subject to provincial budget-approval. Budget review hospitals include publicly owned general hospitals providing acute or short-term care and special hospitals such as pediatric, maternity, orthopedic and chronic hospitals. Also listed in the agreements are "contract" and federal hospitals. Contract hospitals are private and industrial hospitals that provide insured hospital care at a contractually agreed rate per patient-day.

The 1,295 reporting hospitals, in all three categories listed in the federal-provincial agreements, had a total of 132,623 beds and cribs set up at the end of 1964, a rate of 6.9 beds per thousand population. Provincial rates ranged from 5.2 in Newfoundland to 8.9 in Alberta, and territorial rates were even higher. The total number of patient-days per thousand population in 1964 also varied considerably from province to province; that for Canada was 2,021.0, considerably lower than those for Saskatchewan and Alberta but much higher than the rate for Newfoundland. In 1964, 90.8 p.c. of all patient-days in hospitals were paid for under the federal-provincial plan.

\* Hospital insurance is financed in the following ways: (1) general revenues only—Quebec, Newfoundland, Prince Edward Island, New Brunswick, Yukon Territory and the Federal Government; (2) general revenues plus a daily charge at time of service—British Columbia, Alberta and the Northwest Territories; (3) sales tax only—Nova Scotia; (4) premiums, sales tax and other general revenues—Saskatchewan; and (5) premiums, with subsidies from general revenues—Ontario and Manitoba.

† Since Jan. 1, 1965, payments no longer have been made by the Federal Government to the Province of Quebec under the hospital insurance program, the financial arrangements having been transferred to a system of tax abatement.

## 2.—Number of Beds and Cribs Set Up in Reporting Hospitals Listed in Hospital Insurance Agreements, with Rate per 1,000 Population, by Province, as at Dec. 31, 1964

Province	No. of Hospitals Reporting	Beds and Cribs		Province or Territory	No. of Hospitals Reporting	Beds and Cribs	
		Number	Rate <sup>1</sup>			Number	Rate <sup>1</sup>
Newfoundland.....	46	2,542	5.2	Saskatchewan.....	156	7,937	8.4
Prince Edward Island..	9	628	5.9	Alberta.....	160	12,804	8.9
Nova Scotia.....	48	4,537	6.0	British Columbia.....	111	11,555	6.6
New Brunswick.....	42	4,131	6.7	Yukon Territory.....	5	152	9.5
Quebec.....	269	34,469	6.2	Northwest Territories..	26	486	19.4
Ontario.....	319	46,390	7.0				
Manitoba.....	104	6,992	7.3	<b>Canada.....</b>	<b>1,295</b>	<b>132,623</b>	<b>6.9</b>

<sup>1</sup> Per 1,000 population; based on intercensal population estimates as at June 1, 1964.



**3.—Total Patient-Days and Insured Patient-Days in Reporting Hospitals Listed in Hospital Insurance Agreements, with Rates per 1,000 Total and Insured Population, by Province, 1964.**

Province or Territory	No. of Hospitals Reporting	Total Patient-Days during Year		Insured Patient-Days during Year	
		Number	Rate <sup>1</sup>	Number	Rate <sup>2</sup>
Newfoundland.....	47	696,430	1,418.4	647,959	1,322.4
Prince Edward Island.....	9	175,571	1,640.8	166,190	1,567.8
Nova Scotia.....	48	1,301,490	1,712.5	1,173,051	1,587.3
New Brunswick.....	42	1,204,638	1,952.4	1,066,984	1,752.0
Quebec.....	269	10,382,542	1,866.7	9,702,623	1,749.5
Ontario.....	319	13,966,164	2,120.6	12,542,986	1,935.0
Manitoba.....	104	2,008,904	2,097.0	1,794,648	1,938.7
Saskatchewan.....	157	2,250,575	2,386.6	2,135,453	2,297.0
Alberta.....	161	3,382,661	2,362.2	3,140,045	2,211.3
British Columbia.....	111	3,414,103	1,964.4	2,850,357	1,653.3
Yukon Territory.....	5	22,520	1,407.5	18,334	1,222.3
Northwest Territories.....	26	67,844	2,713.8	41,676	1,667.0
<b>Canada.....</b>	<b>1,298</b>	<b>38,873,442</b>	<b>2,021.0</b>	<b>35,280,306</b>	<b>1,855.7</b>

<sup>1</sup> Per 1,000 total population; based on intercensal population estimates as at June 1, 1964.

<sup>2</sup> Per 1,000 insured persons under provincial plans.

The operating cost of budget review hospitals in Canada in 1964, as shown in Table 4, including items of expense and costs of services not covered under the hospital insurance program, amounted to \$981,662,000. Salaries and wages accounted for 64.6 p.c. of that total; medical and surgical supplies for 3.1 p.c., drugs for 3.8 p.c., raw food for 5.3 p.c., other departmental supplies and expense for 16.0 p.c., and such items as interest, depreciation and rent for the remaining 7.1 p.c.

In 1964, the total per capita operating cost of budget review hospitals in Canada was \$51.04, ranging among the ten provinces from \$33.63 in Newfoundland to \$55.07 in Ontario. The provincial variations are due in part to differences in the number of patient-days per thousand population and in the range of hospital care that is provided.

**4.—Revenue Fund Expenditures of Budget Review Hospitals, by Type of Account and by Province, 1964**

Province or Territory	Departmental Expenditures						Total Revenue Fund Expense <sup>2</sup>
	Salaries and Wages	Medical and Surgical Supplies	Drugs	Raw Food	Other Supplies and Expense <sup>1</sup>	Total Depart- mental Expense	
	AMOUNTS OF EXPENDITURES						
	\$	\$	\$	\$	\$	\$	\$
Newfoundland.....	8,704,484	605,700	958,177	1,657,897	3,523,300	15,449,558	16,510,131
Prince Edward Island..	2,238,847	130,697	155,816	296,665	793,087	3,615,112	3,976,124
Nova Scotia.....	19,810,026	1,072,918	1,277,491	2,187,866	7,253,490	31,601,791	34,270,153
New Brunswick.....	18,147,838	1,023,489	1,231,975	1,934,937	5,675,755	28,013,985	31,220,584
Quebec.....	187,282,519	8,803,422	11,269,092	14,492,751	42,028,798	263,876,582	285,304,571
Ontario.....	237,193,838	11,414,191	13,346,280	17,829,487	60,017,771	339,801,567	362,682,132
Manitoba.....	29,557,997	1,473,090	2,017,267	2,358,608	6,984,590	42,391,552	45,201,540
Saskatchewan.....	32,867,441	1,586,640	1,957,344	2,715,406	8,143,352	47,270,183	50,803,179
Alberta.....	45,270,776	2,190,115	2,539,604	4,551,309	10,485,406	65,037,210	72,389,591
British Columbia.....	53,208,465	2,540,105	2,906,883	3,932,918	11,685,014	74,273,385	78,878,007
Yukon Territory.....	87,415	5,931	8,112	15,416	30,447	147,321	155,875
Northwest Territories..	150,261	9,426	5,520	16,107	67,231	248,545	270,113
Canada.....	631,519,907	30,855,715	37,673,561	51,989,367	155,688,241	911,726,791	981,662,000

For footnotes, see end of table, p. 284.

#### 4.—Revenue Fund Expenditures of Budget Review Hospitals, by Type of Account and by Province, 1964—concluded

Province or Territory	Departmental Expenditures						Total Revenue Fund Expense <sup>2</sup>
	Salaries and Wages	Medical and Surgical Supplies	Drugs	Raw Food	Other Supplies and Expense <sup>1</sup>	Total Depart- mental Expense	
EXPENDITURES PER PATIENT-DAY <sup>3</sup>							
	\$	\$	\$	\$	\$	\$	\$
Newfoundland.....	13.81	0.96	1.52	2.63	5.59	24.52	26.20
Prince Edward Island..	12.75	0.74	0.89	1.69	4.52	20.59	22.65
Nova Scotia.....	16.97	0.92	1.09	1.87	6.21	27.07	29.36
New Brunswick.....	16.65	0.94	1.13	1.78	5.21	25.70	28.64
Quebec.....	21.21	1.00	1.28	1.64	4.76	29.89	32.32
Ontario.....	19.50	0.94	1.10	1.47	4.93	27.94	29.82
Manitoba.....	16.66	0.83	1.14	1.33	3.94	23.89	25.47
Saskatchewan.....	16.72	0.81	1.00	1.38	4.14	24.04	25.84
Alberta.....	15.29	0.74	0.86	1.54	3.54	21.97	24.45
British Columbia.....	18.87	0.90	1.03	1.39	4.14	26.34	27.98
Yukon Territory.....	28.18	1.91	2.62	4.97	9.82	47.49	52.25
Northwest Territories..	18.84	1.18	0.69	2.02	8.43	31.17	33.87
Canada.....	18.89	0.92	1.12	1.55	4.67	27.15	29.23
EXPENDITURES PER CAPITA <sup>4</sup>							
	\$	\$	\$	\$	\$	\$	\$
Newfoundland.....	17.73	1.23	1.95	3.38	7.18	31.47	33.63
Prince Edward Island..	20.92	1.22	1.46	2.77	7.41	33.79	37.16
Nova Scotia.....	26.07	1.41	1.68	2.88	9.54	41.58	45.09
New Brunswick.....	29.41	1.66	2.00	3.14	9.20	45.40	50.60
Quebec.....	33.67	1.58	2.03	2.61	7.56	47.44	51.30
Ontario.....	36.01	1.73	2.03	2.71	9.11	51.59	55.07
Manitoba.....	30.85	1.54	2.11	2.46	7.29	44.25	47.18
Saskatchewan.....	34.85	1.68	2.08	2.88	8.64	50.13	53.87
Alberta.....	31.61	1.53	1.77	3.18	7.32	45.42	50.55
British Columbia.....	30.61	1.46	1.67	2.26	6.72	42.73	45.38
Yukon Territory.....	5.46	0.37	0.51	0.96	1.90	9.21	9.74
Northwest Territories..	6.01	0.38	0.22	0.64	2.69	9.94	10.80
Canada.....	32.99	1.60	1.96	2.70	8.15	47.40	51.04
PERCENTAGE DISTRIBUTION OF EXPENDITURES							
Newfoundland.....	52.7	3.7	5.8	10.0	21.3	93.6	100.0
Prince Edward Island..	56.3	3.3	3.9	7.5	19.9	90.9	100.0
Nova Scotia.....	57.8	3.1	3.7	6.4	21.2	92.2	100.0
New Brunswick.....	58.1	3.3	3.9	6.2	18.2	89.7	100.0
Quebec.....	65.6	3.1	3.9	5.1	14.7	92.5	100.0
Ontario.....	65.4	3.1	3.7	4.9	16.5	93.7	100.0
Manitoba.....	65.4	3.3	4.5	5.2	15.5	93.8	100.0
Saskatchewan.....	64.7	3.1	3.9	5.3	16.0	93.0	100.0
Alberta.....	62.5	3.0	3.5	6.3	14.5	89.8	100.0
British Columbia.....	67.5	3.2	3.7	5.0	14.8	94.2	100.0
Yukon Territory.....	56.1	3.8	5.2	9.9	19.5	94.5	100.0
Northwest Territories..	55.6	3.5	2.0	6.0	24.9	92.0	100.0
Canada.....	64.6	3.1	3.8	5.3	16.0	92.9	100.0

<sup>1</sup> Includes fuel, electricity, water, insurance, replacements of bedding and linen, laundry supplies, housekeeping supplies, repairs to buildings, furniture and equipment, maintenance of physical plant, and office supplies and services.

<sup>2</sup> Includes other revenue fund expense (mainly items such as interest, depreciation and rent) that do not relate to particular departments of the hospital.

<sup>3</sup> Based on patient-days during year for adults and children,

excluding newborn.

<sup>4</sup> Based on intercensal population estimates as at June 1, 1964.

#### Subsection 4.—Food and Drug Control

The provisions of the Food and Drugs Act, administered by the Food and Drug Directorate of the Department of National Health and Welfare, apply to the manufacture, advertising, packaging and sale of foods, drugs, cosmetics and medical devices anywhere in Canada. Wide powers are authorized under this legislation to maintain the safety, purity and quality of food and drug products and to prevent misrepresentation in labelling and advertising. There are prohibitions, for example, on the sale of food or drugs that do not meet prescribed standards, are harmful, adulterated, dirty, improperly stored, or manufactured under unsanitary conditions. The Act also prohibits the advertising of any food, drug, cosmetic or medical device as a preventive or cure for a number of serious diseases and also lists drugs that may be sold only by prescription.

Standards of safety and purity are maintained through constant and widespread inspection and laboratory research. The inspection of food-manufacturing establishments plays a major role in the production of clean, wholesome foods containing ingredients that meet recognized standards. Changing food technology requires the development of methods of laboratory analysis to ensure the safety of new types of ingredients and packaging materials. The Food and Drug Regulations list chemical additives that may be used in foods, the amounts that may be added to each food and the underlying reason. Considerable emphasis is placed upon studies to ensure that the levels of pesticide residues in foods do not constitute a health hazard. The effect of new packaging and processing techniques on the bacteria associated with food spoilage is also of special concern. Since the Act is intended for the protection of consumers, a section of the Directorate obtains consumer opinions, deals with individual consumer complaints and provides information on which consumers can base opinions.

Drug standards are subject to continuous review and testing. Detailed information on all new drugs must be reviewed by the Directorate to determine compliance with requirements before release for sale is permitted. Drug regulations set standards for drug manufacturing, facilities and controls, and prescribe additional safeguards in the distribution of investigational and new drugs. Drug manufacturing requirements relate to sanitation of facilities, employment of qualified personnel, testing to ensure standards of quality and safety at stated stages of processing, maintenance of records of testing performance, together with a system of control to enable a complete and rapid recall of any lot or batch of drugs from the market. The controls over clinical trials and marketing of new drugs require detailed information to be submitted to the Directorate concerning the method of manufacture, the tests applied to establish standards of safety and quality, and substantial evidence of the clinical effectiveness of the new drug for the purposes stated. Samples of the final product must also be submitted. Before carrying out clinical trials, a manufacturer also must file complete data on his experience with the drug including any evidence of adverse side effects, and the qualifications of the persons to be engaged in its investigational use. The Minister may suspend clinical testing based on this evidence if he feels that it is in the public interest to do so; in such case the manufacturer has the right to appeal the decision. Drugs expressly prohibited from sale are thalidomide and lysergic acid diethylamide, except under certain conditions as specified in the regulations, whereby sale by a manufacturer to an institution for clinical use or laboratory research by qualified investigators may be approved by the Minister. Any drug that can be classed as a sedative, hypnotic or tranquillizer is listed to be sold only on prescription. The licensing of persons dealing in certain drugs classed as barbiturates and amphetamines is required as well as the keeping of special records and the limitation of their use to medical purposes.

The Food and Drug Directorate administers the Proprietary or Patent Medicine Act, which is concerned with the registration before marketing and the annual licensing of secret-formula medicines sold under proprietary or trade names.

Since early 1965 the Directorate has conducted an adverse-drug-reaction reporting program in 16 teaching hospitals across Canada to recognize and investigate reactions to drugs. The co-operation of the medical, dental, veterinary and pharmaceutical pro-



fessions was solicited in advising the Directorate of such reactions in private practice. Close liaison is maintained with the World Health Organization and other authorities in foreign countries for the prompt reporting of such reactions.

Regulation of the supply and use of narcotic drugs is carried out under the Narcotic Control Act, as revised in 1961. This legislation prescribes a maximum penalty of seven years with no minimum for illegal possession; a maximum penalty of life imprisonment for trafficking; and minimum and maximum penalties of seven years and life imprisonment, respectively, for illegal export and import. The Royal Canadian Mounted Police and other law-enforcement agencies continue to make every effort to keep the illicit traffic to a minimum.

### Subsection 5.—Medical Services

Through its Medical Services Branch, the Department of National Health and Welfare provides several direct and indirect types of medical service, as described in the following paragraphs. "Indirect" services are provided by hiring local services where practicable.

**Indians and Eskimos.**—Medical and public health services are made available to registered Indians or Eskimos who are not included under provincial arrangements and who are unable to provide for themselves. A large volume of the service in treatment and health education is rendered to patients through 84 Departmental out-patient clinics staffed by medical and other public health personnel. In remote areas, the key facility is frequently the Departmental nursing station, a combined emergency treatment and public health unit having two to four beds under the direction of one or two nurses; 43 of these are operated throughout Canada.

Where practicable, there has been an increasing integration of Indians into provincial and municipal health agencies and the number of hospitals and other facilities provided specifically for them have been reduced accordingly. At present, the Department maintains 16 hospitals at strategic points and co-operates elsewhere with community, mission or company hospitals. Indians are included under all provincial prepaid insurance plans for hospital care and other forms of medical care but in almost all cases the total cost of mental and tuberculosis care is borne directly by the Federal Government. Indian and Eskimo health workers are trained to give instruction in health care and sanitation.

**Northern Health.**—Because of the special problems in developing health services in the Far North, the Department has been given the responsibility of co-ordinating federal and territorial health care for all residents. In so doing, it undertakes the functions of a health department for the Council of the Northwest Territories and assists the territorial government of the Yukon Territory to provide certain health services. Close liaison is maintained with the federal departments directly responsible for administrative matters affecting these areas.

In the Yukon Territory, services for the total population administered through the Commissioner for the Yukon and provided on a cost-sharing basis with the Department of National Health and Welfare include complete treatment for tuberculosis, payment for services rendered at the Alberta cancer clinics, mental hospital care through arrangements with the Province of British Columbia, and medical care for indigent patients. Public health nursing services, measures for control of communicable diseases, and administration of the principal public hospital are primarily the responsibility of the Department. Similar services are provided in the Northwest Territories, the costs being shared by the Department of Indian Affairs and Northern Development and the Department of National Health and Welfare. Indigent residents are eligible for medical, dental and optical services as well as for tuberculosis and mental care.

**Sick Mariners.**—The Department provides compulsory prepaid medical, surgical, hospital and other treatment services to crew members of all foreign-going ships arriving in Canada and Canadian coastal vessels in interprovincial trade, and provides medical,

surgical and treatment services on an elective basis to crew members of Canadian fishing and government vessels. (Canadian seamen obtain their hospital care under the provincial hospital insurance plans.)

**Leprosy.**—Since 1960, isolation and treatment of persons suffering from leprosy have been arranged in their home neighbourhoods. Under the provisions of the Leprosy Act, facilities for the diagnosis and treatment of leprosy are provided in a six-bed unit of the Hôtel-Dieu Hospital at Tracadie, N.B.

**Quarantine.**—Under the Quarantine Act, all vessels, aircraft and other conveyances and their crew and passengers arriving in Canada from foreign countries are inspected by the quarantine officers to detect and correct conditions that could lead to the entry into Canada of such diseases as smallpox, cholera, plague, yellow fever, typhus and relapsing fever. Fully organized quarantine stations are located at all major seaports and airports.

**Immigration.**—Under the Immigration Act and the Department of National Health and Welfare Act, the Immigration Medical Service conducts in Canada and other countries the medical examination of all applicants for immigration to Canada and also provides treatment for certain classes of persons after arrival in Canada, including immigrants who become ill en route to their destination or while awaiting employment.

**Public Service Health Counselling.**—Health counselling is offered through Medical Services units to federal employees throughout the country. This service is primarily diagnostic and advisory only but emergency treatment can also be given. The Public Service Health Counselling Division also examines civilian aviation personnel and advises on standards of physical fitness required for them.

**Aerospace Medicine.**—Research on civil aerospace medicine is conducted by the Department in close liaison with the National Research Council, the Defence Research Board and the Royal Canadian Air Force Institute of Aviation Medicine.

**Regulation of Hygienic Standards.**—The Department is responsible for regulating hygienic standards on federal property, interprovincial common carriers, Canadian shipping and aircraft.

**Coast Guard Medical Service.**—The Department provides a medical service for and in conjunction with the Canadian Coast Guard.

### Subsection 6.—Radiation Protection

A comprehensive radiation protection program has been developed in Canada in response to the rapidly increasing use of radioactive materials, X-ray equipment and nuclear reactors in medicine, industry and research, and to increasing concern about radiation from atmospheric testing of nuclear weapons, from medical X-ray procedures and from natural sources.

Because of the need for national controls over dealings with uranium and by-product materials, the Federal Government has developed procedures for the safe handling and use of all radioactive materials, implemented through the close collaboration of federal and provincial health departments supported by special advisory committees. Acting under the federal Atomic Energy Control Regulations, the Department of National Health and Welfare reviews all applications for radioisotope licences and recommends health and safety conditions; it also provides dosimetry services for measuring and recording the personal radiation exposures of workers handling beta-ray, gamma-ray and neutron sources. Licensed establishments are inspected by federal or provincial inspection officers. The Department serves as the co-ordinator for the federal departments and agencies that are capable of providing specialized radiation protection services, particularly in the event of radiation accidents involving possible exposure of members of the public; it also provides

'whole-body counting' and bio-assay facilities for the follow-up of persons who may have ingested or inhaled radioactive contamination. It gives short-term training courses in radiation protection for persons with varying degrees of responsibility for radiation protection on a day-to-day basis. Committees of the Atomic Energy Control Board, including federal and provincial representatives, give special attention to the health and safety problems associated with the siting, design, construction and operation of nuclear reactors and charged-particle accelerators.

Although there is no federal regulatory authority to provide health and safety supervision over the use of X-rays, the Department has established a committee on the development of X-ray safety standards to recommend uniform standards and procedures throughout Canada. Five provinces (Nova Scotia, Quebec, Ontario, Saskatchewan and Alberta) have enacted specific enabling legislation applicable to X-rays and two (Nova Scotia and Saskatchewan) have issued regulations requiring registration of operators and/or equipment. The Department's personnel dosimetry service is available to X-ray workers and its reports are given to the provincial departments of health.

A comprehensive nation-wide monitoring program has been developed to assess the exposure of the public to radiation from radioactive fallout from nuclear-weapons testing. The Department is assisted in the systematic collection of samples of air, precipitation, soil, wheat, milk and human bone by the federal Departments of Transport and Agriculture and pathologists in hospitals throughout Canada. Reports of the concentration of such fallout components as strontium-90 and cesium-137 in these samples are published monthly. Because of a unique food-chain cycle in the Far North, a study of cesium-137 in the North is included in the nation-wide program, under which measurements are made of cesium-137 in caribou and reindeer meat and in human urine. In addition, direct measurements of cesium-137 levels in living persons are made using portable and fixed 'whole-body counters'.

### Subsection 7.—Health Research and International Health

**Health Research.**—Health research in Canada is carried on in universities, hospitals, research institutions and government departments. The main sources of financial support are governments, voluntary agencies, charitable foundations, professional bodies and business corporations.

The Federal Government conducts medical and dental research (intramural research) in the Department of National Health and Welfare and the Defence Research Board. The Medical Research Council, the National Research Council, the Department of National Health and Welfare, the Department of National Defence, the Department of Veterans Affairs, and the Queen Elizabeth II Fund all give financial support to research in universities, hospitals and other institutions (extramural research).

The Medical Research Council, formed in 1960 from the National Research Council's former Division of Medical Research (see p. 149), is the principal federal health-research advisory and co-ordinating agency. Its primary concern is the support of fundamental research in the basic medical sciences. It administers most of the federal medical research grants that support full-time investigation by research scientists in Canadian medical schools and their affiliated hospitals. The National Research Council pursues in its broad program many investigations relevant to health. Its Associate Committee on Dental Research administers specific grants for dental research and for training dental-research personnel.

The Department of National Health and Welfare supports both extramural and intramural health research, mainly of an applied nature. Intramural research is carried on by the Food and Drug Directorate, the Medical Services Directorate, the Health Insurance and Resources Branch, by several divisions and laboratories of the Health Services Branch, and by the Research and Statistics Division. The Department's extramural research program is composed of public health research, surveys and studies that have the prior approval of the provinces for assistance under the National Health Grant Program (see p. 280).



Assisted projects mainly fall into one of the following areas: prevention of disease and disability; operational or administrative research on health programs and services; epidemiological studies; or environmental health, sanitation and public health engineering.

The Defence Research Board sponsors both intramural and extramural research on medical problems of defence interest (see Chap. XXVI, Sect. 1, Subsect. 4). In addition, a special unit to conduct research in aviation medicine is in operation at McGill University. The Department of Veterans Affairs maintains a program of medical research in its hospitals and clinics across Canada, mainly dealing with conditions affecting aging, such as arthritis and arteriosclerosis (see also p. 334). The Queen Elizabeth II Fund for Research in the Diseases of Children, established by the Federal Government in 1959, makes a fixed annual sum available for training researchers and scientists in children's diseases.

**International Health.**—Canada actively assists and co-operates with the World Health Organization (WHO) and the other specialized agencies of the United Nations whose programs have a substantial health component or orientation. Capital and technical assistance are provided to developing countries through the Colombo Plan and other bilateral aid programs. Health training is provided for a number of persons coming to Canada each year under the different technical co-operation schemes (see p. 171 and pp. 178-181); during 1965, 112 trainees arrived, bringing the total number of trainees in Canada during the year to 282. These persons were working in a wide range of health disciplines under the External Aid Program but with greatest concentration in undergraduate medicine and in public health and nursing specialties.

Canadian experts in health legislation, health administration and related areas undertook specific assignments abroad during the year and teachers and specialists in a number of clinical fields were provided in response to requests from the developing countries. Capital assistance, primarily through the provision of cobalt beam therapy units for cancer treatment centres in the Colombo Plan area, was continued.

Canada concluded its membership on the Executive Board of the WHO in May 1965 but its term of office on the Executive Board of UNICEF was renewed at the beginning of the year. The Deputy Minister of National Welfare, Canada's representative on the Board, was elected Chairman for the period commencing February 1966 through July 1968.

To carry out Canada's obligations under the International Sanitary Conventions, the Department of National Health and Welfare maintains quarantine measures for ships and aircraft entering Canadian ports and provides accommodation and necessary medical care for persons arriving in Canada who require quarantine (see p. 287).

The Department is responsible for the enforcement of regulations governing the handling and shipping of shellfish under the International Shellfish Agreement between Canada and the United States and, at the request of the International Joint Commission, participates in studies connected with control of pollution of boundary waters between Canada and the United States as well as with problems caused by atmospheric pollution. Other international health responsibilities include the custody and distribution of biological, vitamin and hormone standards for WHO and certain duties in connection with the Single Convention on Narcotic Drugs, 1961, as well as Canada's representation on the Narcotic Commission of the United Nations.

### Subsection 8.—Consultative and Technical Services

The extension of technical and consultative assistance to the provinces is a function of the Health Branch of the Department of National Health and Welfare. The following specialized services supply consultation and information, advise on health care projects, co-ordinate activities and planning, and exercise leadership in promoting high standards of service: Aerospace Medicine and Safety; Child and Maternal Health; Dental Health; Emergency Health; Epidemiology; Health Education; Laboratory of Hygiene; Medical Rehabilitation; Mental Health; Nursing; Nutrition; Occupational Health; Planning and

Evaluation; Public Health Engineering; Research Development; Health Grants; Health Resources; Hospital Insurance and Diagnostic Services; Health Facilities Design; Medical Care; and Research and Statistics.

## Section 2.—Provincial and Local Health Services

Provincial and local health services may be grouped into several broad categories: provincial preventive public health services; local preventive public health services; services for specific diseases or disabilities combining prevention and treatment; services related to general medical and hospital care; and services for disabled and chronically ill persons.

Provincial and local governments co-operate closely in providing community public health services. The autonomy of the provinces and their social, economic and geographic diversity make for some variety in legislative provisions, in financial arrangements and in the detailed division of functions between provincial health departments and local and voluntary agencies. Each province, however, offers all or nearly all of a basic range of public health services, which includes environmental health, occupational health, communicable disease control, maternal and child health, dental health, nutrition, health education and public health laboratories.

### Subsection 1.—Provincial Preventive Public Health Services

**Environmental Health.**—The control of factors in the environment that are harmful to physical health is a rapidly expanding area of public health activity. Much of the work in community sanitation involves traditional inspection duties essential to the maintenance of pure milk, water and food supplies, disposal systems and provision of sanitary conditions in public areas. Increasing industrialization and urbanization, however, have both magnified the old problems and imposed new responsibilities. Air pollution, water pollution, radiation exposure and the use of pesticides are emerging as major environmental problems, necessitating the co-operative efforts of governments and other agencies in research and in planning effective control measures.

**Occupational Health.**—Services designed to prevent accidents and occupational diseases and to maintain the health of employees are the common concern of provincial health departments, labour departments, workmen's compensation boards and industry management. Provincial agencies regulate working conditions and offer consultant and educational services to industry. All provinces have legislation (Factory Acts, Shop Acts, Mines Acts, Workmen's Compensation Acts) setting health safety standards for employment.\*

**Communicable Disease Control.**—There are separate divisions of epidemiology or communicable disease control in six provinces; in the other provinces these functions are handled by other provincial medical consultants. Local health authorities undertake case-finding and diagnostic services in co-operation with public health laboratories, carry out epidemiological investigations and often participate in tuberculosis and venereal disease control measures. All provincial health departments organize immunization programs for the public against diphtheria, tetanus, poliomyelitis, whooping cough and smallpox. Through agreement with the Federal Government, live oral poliovirus vaccine (Sabin) as well as Salk vaccine is made available by provincial health departments for immunization against poliomyelitis. Other agents such as gamma globulin may be provided under certain conditions for protection against measles and infectious hepatitis.

**Maternal and Child Health.**—Most provincial health departments have maternal and child health divisions under medical direction or have made other administrative arrangements to provide consultant services in this field. In addition, six of the provinces

\* See Chapter XVIII, Section 1, Subsection 2, for provincial labour legislation.

have consultant nursing services within these divisions. Provincial divisions provide advisory services to local health departments and to hospitals, conduct studies of local problems and needs, and assist in the training of health personnel.

**Dental Health.**—All provincial health departments have dental health divisions that administer programs varying under local conditions but directed mainly to the training of dentists and dental hygienists in public health, the operation of children's preventive and treatment clinics, and health education. Water fluoridation projects involving 4,324,000 people are in operation in eight provinces and in the Northwest Territories. Four provinces—Alberta, Manitoba, Ontario and Nova Scotia—have set up, in conjunction with their dental schools, special courses for dental hygienists. In all ten provinces clinical care is provided for children in remote rural areas. A locally sponsored plan in which the cost of dental services for children is shared by the community and the provincial health department is in operation in more than 90 communities in British Columbia.

**Nutrition.**—Services include technical guidance, education, consultation and research. In some provinces, school lunch programs are sponsored and dietary supplements distributed. Five provinces have special nutrition divisions; in other provinces, consultants in nutrition function under a broader grouping of departmental services.

**Health Education.**—A basic concern of provincial health authorities is to stimulate public interest in important health needs, and most provincial health departments have a division of health education directed by a full-time professional 'health educator'. The division may also provide consultative services to the management of the department, to local health authorities and to voluntary associations.

**Public Health Laboratories.**—The public health laboratory was one of the earliest provincial services developed to assist local public health departments in the protection of community health and the control of infectious diseases. Public health bacteriology (testing of milk, water and food), diagnostic bacteriology and pathology are the principal functions of the laboratory service, with medical testing for physicians and hospitals steadily increasing in volume. Efforts to co-ordinate public health and hospital laboratory services and measures to bring laboratory facilities to rural areas are among the recent developments.

### Subsection 2.—Local Preventive Public Health Services

Local health authorities are responsible generally for the administration and enforcement of local regulations and by-laws relating to health and for the direct provision of various preventive health services. The scope of these services varies greatly in different areas and provinces but basic programs are similar, covering environmental sanitation, communicable disease control, child, maternal and school health, health education and vital statistics. Vital statistics are collected locally and information is used to analyse and plan public health activities. Among other services provided locally by some health units or departments are mental health, occupational health, community nutrition, and preventive dental health. Increasing attention is being directed toward measures designed to control the chronic diseases, to extend the period of active life, and to provide adequate public health protection for the aging segment of the population.

**Health Units.**—Full-time local public health services under the direction of full-time medical health officers have been developed partly through municipal health departments, partly through joint provincial-local health units, and partly through provincial health districts. City health departments are administered and financed directly by the municipality concerned, usually through a municipal board of health. Local health units are designed primarily for rural areas with staff serving county or other combinations of local government jurisdictions, and financial and administrative responsibility shared between provincial and local authorities; although the division of responsibility varies among prov-



inces, the trend is toward an increasing degree of provincial control. In some provinces (in the Atlantic Provinces particularly) provincially administered local health districts provide services without administrative participation by local citizens.

At the end of 1965, full-time local public health services were supplied through 34 urban health departments covering 6,400,000 persons and 190 local health units covering 10,700,000 persons. The total number of full-time health departments, units and districts had increased to 224 from 157 in 1948. The basic staff of an urban health department or local health unit usually comprises a medical officer of health, some public health nurses, and sanitation inspectors. To a great extent, the services provided depend upon having a sufficient number of qualified persons employed by the agency. Total full-time staff employed by local agencies at the end of 1965 numbered 5,896, of whom 2,674 were in urban health departments and 3,222 in local health units. Many areas not requiring full-time services of health personnel employ part-time personnel but more often these services are provided directly to the local area by the provincial health department. In addition, provinces are responsible for providing local health services in municipally unorganized territories.

### Subsection 3.—Services for Specific Diseases or Disabilities

**Mental Health.**—Treatment programs for the mentally ill have centred mainly around three types of facilities: the mental hospital, the psychiatric unit in the general hospital and the organized community mental health clinic. These facilities, however, no longer have separate and distinct functions. New emphasis on the role of the community and its resources in the treatment and rehabilitation of the mentally ill is affecting the whole program of in-patient care. Utilizing the basic clinical facilities of general hospitals and mental hospitals, the community program is extending its scope and usefulness through the provision of day-care centres, sheltered workshops, half-way houses, and foster home and boarding home care. Most of the large general hospitals in Canada have organized psychiatric units, providing bed accommodation for short-stay patients. Further planning in community-based services concerns the development of small regional psychiatric hospitals from which a comprehensive community program will emanate. Examples of this type are the 150-bed hospital in Yorkton, Sask., a 68-bed psychiatric hospital in Selkirk, Man., and the developing community facilities for in-patient, out-patient and day care in several Ontario cities, including Ottawa, Sudbury and Windsor. The Atlantic Provinces, Quebec and the western provinces are all developing new facilities and strengthening existing ones.

Special centres for the assessment and diagnostic evaluation of mentally retarded children are also being developed. Day-training schools or classes for the trainable retarded, sponsored by local associations of parent groups forming the Canadian Association for Retarded Children, are organized throughout the land and research programs designed to afford better understanding and management of mental retardation problems are being developed and expanded in all provinces.

Most public mental hospitals provide care and treatment for all types of mental illness. New programs of recreational and industrial therapy and enlarged and modernized clinical and surgical facilities are examples of widespread improvements in mental hospital care that particularly benefit patients undergoing active treatment. More recently, planning has been undertaken to reassess the status of the long-term chronically ill patient. Since 1961 new legislation governing the admission and care of the mentally ill has been enacted in six provinces—Nova Scotia, Ontario, Saskatchewan, Alberta, Manitoba and British Columbia—designed to promote easier and more informal methods of admission and discharge and to establish machinery guaranteeing periodic review of the medical certification of long-term patients.

A great part of the cost of care in mental hospitals is borne by the provincial governments, although a charge, according to ability to contribute, may be made in some provinces. Newfoundland and Saskatchewan provide complete free care; Manitoba covers minimum

maintenance costs for all patients; in Nova Scotia the provincial hospital gives free care to patients requiring active treatment; and in Ontario mental-institution treatment is included in the hospital care insurance plan.

**Tuberculosis.**—The fight against tuberculosis is one of the major programs of all health departments. Free hospitalization and free drug treatment, both on an in-patient and domiciliary basis, are provided. In two provinces extensive BCG programs are in effect and in the other provinces this prophylactic is provided to groups at special risk. Case-finding programs in the form of community tuberculin and X-ray surveys, surveys of high risk groups, and the follow-up of all arrested tuberculosis cases are routine. These activities have resulted in a decline in the Canadian tuberculosis death rate of 85 p.c. since 1951; in 1965 the rate was 3.6 per 100,000 population. The number of beds set up in public sanatoria declined from a peak of 18,977 in 1953 to 6,462 in 1965.

**Cancer.**—Health departments and lay and professional groups working for the control of cancer have been concerned mainly with four aspects of the problem—diagnosis, treatment, research and public education. In cancer detection and treatment, specialized medicine, hospital services and an expanding public health program are closely related. There are programs operating under health departments in four provinces; four others have provincially supported cancer agencies or commissions. These sponsor the work of diagnosis and treatment in special clinics, located usually within the larger general hospitals. Under the provincial hospital insurance plans, the benefits pertaining to in-patient care in the treatment of cancer are essentially similar in ten provinces and include such special services as diagnostic radiology, laboratory tests and radiotherapy. Similar services for out-patients are covered either by hospital insurance or by federal-provincial cancer control grants. Comprehensive free medical programs for cancer patients are in operation in Saskatchewan and Alberta and for cancer in-patients in New Brunswick.

**Venereal Disease.**—Free diagnostic and treatment services are available in all provinces but the operation of government clinics is being increasingly superseded by the method of supplying free drugs to private physicians who are reimbursed for treatment of indigents on a fee-for-service basis.

**Alcoholism.**—Ontario, Manitoba, Alberta and British Columbia carry out research and education programs and operate centres for treatment, supported largely by public funds. Ontario, Saskatchewan and Alberta also have rehabilitation programs for alcoholic inmates of reform institutions. Legislation in Newfoundland, New Brunswick, Nova Scotia and Quebec authorizes the setting up of similar agencies to initiate research and education studies in those provinces.

**Other Diseases or Disabilities.**—Services for persons with chronic disabilities, such as heart disease, arthritis, diabetes, visual and auditory impairments and paraplegia have been developed largely by voluntary agencies assisted by federal and provincial funds. (See also pp. 296-297.)

#### Subsection 4.—Public Medical Care

Province-wide medical care insurance programs are operating in Saskatchewan, Alberta, British Columbia, Ontario and Newfoundland, with differences in the degree and extent of coverage and in benefits provided. In addition, most of the provinces have programs for public assistance recipients. In the present context, public medical care is grouped into four broad categories: provincial universal-coverage medical care programs; provincially sponsored or assisted medical care programs; provincial programs for public assistance recipients; and provincial programs for other selected groups.

**Provincial Universal-Coverage Medical Care Programs.**—Saskatchewan is the only province having a universal-coverage medical care program. Since July 1962, every person who has resided in Saskatchewan for three months (and is not entitled to receive

medical services under other programs) and has paid, or has had paid on his behalf, the required premium is entitled to have payment made on his behalf from the Medical Care Insurance Fund for medical, surgical and obstetrical care, without limit, in his home, in the doctor's office and in hospital, from his physician-of-choice (including payment at specialists' rates for referred specialists' services). There are no restrictions relating to age or pre-existing conditions. Physicians may elect to receive payment in a number of ways; usually either they choose to receive direct payment from the Medical Care Insurance Commission at 85 p.c. of the 1959 Schedule of Minimum Fees of the College of Physicians and Surgeons of Saskatchewan (as amended) as payment in full, or their patients enrol voluntarily with an approved health agency, which pays the physician an amount equal to the amount paid to the agency by the Commission in respect of the physician's assessed account. In 1965, annual premiums of \$12 for a single person and \$24 for families accounted for 25 p.c. and general revenue contributions for 73 p.c. of the Commission's total receipts. There were more than 887,000 persons covered by the Saskatchewan Medical Care Insurance Act at the end of June 1965, or about 93 p.c. of the provincial population. Most of those not covered were protected under other public programs, federal or provincial.

**Provincially Sponsored or Assisted Medical Care Programs.**—Three provinces—Alberta, British Columbia and Ontario—have established provincially assisted voluntary medical care programs.

The Alberta Medical Plan, which became effective Oct. 1, 1963, is designed to help residents with low incomes who voluntarily purchase medical care insurance from approved non-profit and commercial agencies. The approved carriers must make available to all residents a program of insurance that provides the attendance of physicians in home, office or hospital, as well as surgical, specialist and general diagnostic services. Maximum premium rates set by the province must not be exceeded. The Plan is financed completely from personal premiums but there is provision for government subsidization of the premium costs of low-income persons to the extent of 80 p.c. for persons with no taxable income, 50 p.c. for persons with taxable income from \$1 to \$500, and 25 p.c. for persons with taxable income from \$501 to \$1,000. All residents may insure for medical services either through the doctor-sponsored Medical Services (Alberta) Incorporated or through approved agencies; doctors are reimbursed at 90 p.c. of their assessed fees by the former or at 100 p.c. by the latter. In October 1965, an estimated 850,000 persons were covered by the Plan, or 59 p.c. of the provincial population. Of these, about 187,000, or 13 p.c. of the provincial population, were covered by subsidized insurance contracts.

On July 1, 1966 the Alberta Health Program came into effect; it comprises the Alberta Medical Plan and the new Extended Health Benefits Plan. The latter makes available, through approved companies and with premium-subsidy rates equal to those under the Alberta Medical Plan, insurance for many additional health services, including prescribed drugs, optometry, physiotherapy, psychology, ambulance, osteopathy, chiropractic, podiatry, naturopathy, and various medical supplies and appliances. A deductible amount and a co-insurance charge or limited liability on some services apply to the new Plan.

The British Columbia Medical Plan took effect Sept. 1, 1965. The Plan, an agency directed by representatives of the government and the medical profession, makes available to all provincial residents insurance that provides most physician's services, as well as limited physiotherapy, special nursing, chiropractic and naturopathic services. To persons resident in the province for the preceding 12 months, the government offers subsidies of 90 p.c. of the premium for those with no taxable income and of 50 p.c. for those with taxable income from \$1 to \$1,000. Annual premiums are \$60 for a single person, \$120 for a family of two, and \$150 for a family of three or more persons. The government pays \$2,000,000 annually to a Medical Grant Stabilization Fund in order to cover any deficit. In February 1966, more than 198,000 persons were covered under the Plan and 67 p.c. of the insurance contracts were subsidized.

The Ontario Medical Services Insurance Plan began paying benefits July 1, 1966. The Plan offers to all Ontario residents insurance that covers most physician's services.



Subsidies are available to certain persons resident in the province for the previous 12 months. The government will pay the full premium of applicants who had no taxable income during the preceding year and of recipients of public assistance, and it will pay 50 p.c. of the premium for single applicants who had taxable income in the preceding year of \$500 or less, for married applicants with one dependant whose taxable income in the preceding year was \$1,000 or less, and for married applicants with two or more dependants whose taxable income was \$1,300 or less. Premiums have been set at \$60 for a single person, \$120 for a family of two, and \$150 for a family of three or more. The Plan is administered by the Department of Health and a Medical Services Insurance Council, representing the public and the medical profession, advises the Minister on its operation.

**Programs for Public Assistance Recipients.**—For several years, Nova Scotia, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia have operated programs providing certain personal health care services for specified categories of welfare recipients. In 1966, Quebec commenced a program providing comprehensive physician's services to recipients of public assistance. Medical care benefits for recipients of assistance in Saskatchewan and Ontario are now administered through the public medical care schemes set up in those provinces.

In Quebec, Ontario, Saskatchewan, Alberta and British Columbia coverage extends to virtually all recipients of provincial aid, including persons receiving needs-tested supplements to old age security pensions (a special means test for health care enrolment is used in Ontario), recipients of old age assistance, mothers' allowances and their dependants, disabled persons' allowances, blindness allowances, general welfare assistance and, in some provinces, child wards, vocational rehabilitation recipients and short-term welfare recipients. Manitoba covers aged and infirm persons requiring custodial care, recipients of blind persons' allowances and recipients of mothers' allowances and their dependants. Nova Scotia enrolls only blindness allowance recipients and mothers' allowance recipients and their dependants. All provincial programs provide comprehensive physician's services, including medical attendance in the home, office and hospital, surgery, diagnostic services and obstetrical care. Some limitations on billing for certain physician's services, such as surgery and hospital visits, exist in Nova Scotia.

Dental and optical care benefits are provided to all covered recipients in the four westernmost provinces, sometimes only on special authorization and/or with dollar limits. Ontario finances a program of dental care for the children of mothers' allowance recipients. Other services provided in some provinces include orthopedic appliances, physiotherapy, chiropody, chiropractic treatment, home nursing and transportation for medical reasons.

Recipients of public assistance in Newfoundland who are individually certified by the welfare officer in their area as being unable to meet their medical care payments can be given free service, including comprehensive medical service, out-patient drugs and dressings, prosthetic appliances, transportation to and from hospital, dental care where available, and eye refractions and glasses.

**Programs for Other Selected Groups.**—Under the Cottage Hospital Plan, in about 18 rural cottage hospital districts, Newfoundland pays for subscribers' medical care in the home, doctor's office and out-patient clinic or cottage hospital, as well as specialist care not available in the local area but secured in St. John's, Grand Falls or Corner Brook upon referral by the local doctor or nurse. Premiums charged vary according to district from \$6 to \$24 for a family and from \$3 to \$12 for a single person. Physicians in cottage hospital districts are paid a full-time salary which varies with the size of district, level of responsibility, years of experience and other factors. In 1964, about 205,000 persons were eligible under the program, or 42 p.c. of the provincial population. In three additional rural areas, the government subsidizes the costs of voluntary organizations that employ doctors and provide comprehensive services to area residents upon payment of a premium of \$10 for a family or \$5 for a single person. These plans cover 51,000 persons, or 10 p.c. of the population.

Newfoundland also has a partially universal program—the Children's Health Service—financed out of general revenues, which automatically covers all children under 16 years of age for in-hospital medical and surgical care, anaesthesia and special consultations. For services rendered, physicians are paid approximately 80 p.c. of the fees of the Newfoundland Division of the Canadian Medical Association. The Children's Health Service covers 218,000 children but, of these, some 113,000 reside in districts covered by the cottage hospital and voluntary schemes described in the preceding paragraph.

### Subsection 5.—Services for the Disabled and Chronically Ill

Physical medicine and rehabilitation departments have been established in most teaching, veterans' and children's hospitals. Complementing these are some 48 independent rehabilitation centres, including 27 children's centres and four workmen's compensation centres. Hospital services available to in-patients and out-patients include physical medicine, physiotherapy, occupational therapy and social services; most of the children's hospitals and the teaching hospitals also supply speech therapy. The rehabilitation centres provide comprehensive medical, psychosocial and vocational services to more severely disabled persons who require intensive or long-term therapy. In addition, the children's hospitals and centres operate special education classes. Provincial and community agencies such as those providing vocational rehabilitation and home care services co-operate in the rehabilitation of disabled children and adults.

Most large general hospitals conduct special out-patient clinics for disabilities such as arthritis and rheumatism, diabetes, glaucoma, speech and hearing defects, heart diseases, orthopedic and neurological conditions. Voluntary agencies, which are concerned with specific disability groups such as arthritics, the blind, the deaf, children suffering from cystic fibrosis, haemophilia or muscular dystrophy, the mentally ill or retarded, or disabled persons generally, are also broadening their rehabilitation services. These agencies provide such services as counselling, the supply of personal aids and appliances, employment and education, and sheltered workshops and also participate in the provision of services for the homebound. More than 150 sheltered workshops were in operation in 1965, serving handicapped persons. Organized home care programs, under either hospital or community sponsorship, have been established in the principal cities, providing nursing, homemaker, physiotherapy and other services to the disabled, the chronically ill and the aged in their own homes. Several provincial health departments have instituted home nursing services to residents of outlying districts.

Provincial health, welfare and education departments and voluntary agencies are developing specialized services for physically and mentally handicapped children. Most provinces have established registries of handicapped children of varying coverage in co-operation with physicians, health units, hospitals and other agencies. Such registries, which are increasingly useful sources of morbidity statistics including congenital anomalies, assist in the planning and co-ordination of rehabilitation services. In addition, health departments and the crippled children's societies provide family counselling, recreation, transportation and foster-home care; travelling clinics extend services to outlying areas. Special schools or classes for handicapped children are operated by local school boards in the main cities but most of the 10 residential schools for the deaf and the six for the blind are operated by the provincial education departments.

The Federal Government, through its National Health Grants (see p. 280), assists the provinces in their programs to develop medical rehabilitation services and facilities, to support the training of medical rehabilitation personnel (through grants to university schools and student bursaries), to provide equipment and to finance research. Three regional prosthetic research and training units in rehabilitation centres in Montreal, Toronto and Winnipeg and the Bio-Engineering Institute of the University of New Brunswick are supported by National Health Grants. These three regional centres and several juvenile amputee clinics in other cities are rehabilitating children with limb deformities or amputations. A federal-provincial program assists in the extraordinary rehabilitation,

maintenance and counselling costs on behalf of children with thalidomide-induced defects. The transfer of the prosthetic service for veterans to the Department of National Health and Welfare on Jan. 1, 1966, makes it possible for the provinces to extend these services to non-veterans.

### Section 3.—Hospital and Other Health Statistics

Statistical information on the health of Canadians is at present limited to the well established and highly standardized mortality, communicable disease and institutional statistics series, all of which have been available for a long period, and the recently established series covering operations under the federal-provincial hospital insurance program (pp. 281-284). Much statistical information is also available from provincial and other health sources.

Statistics on causes of death are given in the Chapter on Vital Statistics, pp. 255-258; those on hospital statistics in Subsection 1 following; and those on notifiable diseases in Subsection 2.

#### Subsection 1.—Hospital Statistics\*

Hospitals in Canada are grouped into two categories for statistical purposes—first according to ownership, i.e., public, private or federal, and second by type of service provided, i.e., general, allied special (which includes chronic, convalescent, rehabilitation, maternity, communicable disease and orthopedic hospitals), mental and tuberculosis. General hospitals, which account for the majority of beds, are further divided into size groupings in accordance with their rated bed capacity.

As shown in Table 5, the 1,452 hospitals of all types in operation in Canada during 1965 had a combined rated bed capacity of 210,367. The ratio of beds per 1,000 population, at 10.7, was slightly higher than in 1964. General hospitals accounted for 54.1 p.c. of the total rated beds, the provincial ratio ranging from 4.9 in Quebec to 7.2 in Saskatchewan; mental hospitals accounted for 32.5 p.c. of the rated beds, allied special hospitals for 10.2 p.c. and tuberculosis sanatoria for 3.2 p.c.

\* Prepared in the Institutions Section of the Health and Welfare Division, Dominion Bureau of Statistics. Detailed information will be found in the following DBS publications: *Hospital Statistics, Vols. I to VII* (Catalogue Nos. 83-210 to 83-216); *Mental Health Statistics, Vol. III* (Catalogue No. 83-205); *Tuberculosis Statistics, Vol. II* (Catalogue No. 83-207); and *List of Canadian Hospitals and Related Institutions and Facilities* (Catalogue No. 83-201).

#### 5.—Number and Bed Capacity of Operating Hospitals (Public, Private and Federal) Operating in Canada, 1961-65

Type	1961	1962	1963	1964	1965
HOSPITALS					
	No.	No.	No.	No.	No.
General.....	1,018	937	943	942	976
Allied special.....	212	313	307	327	328
Mental <sup>1</sup> .....	89	87	92	100	103
Tuberculosis <sup>2</sup> .....	56	48	42	45	45
<b>Totals.....</b>	<b>1,375</b>	<b>1,385</b>	<b>1,384</b>	<b>1,414</b>	<b>1,452</b>
BEDS					
	No.	No.	No.	No.	No.
General.....	99,530	103,607	106,822	110,522	113,794
Allied special.....	16,350	19,454	21,184	20,802	21,421
Mental.....	68,674	66,725	65,954	65,548	68,323
Tuberculosis <sup>2</sup> .....	11,344	10,241	8,691	6,350	6,829
<b>Totals.....</b>	<b>195,898</b>	<b>200,027</b>	<b>202,651</b>	<b>203,222</b>	<b>210,367</b>

<sup>1</sup> Mental hospitals only; exclusive of psychiatric units in other hospitals.  
does not include tuberculosis units in other hospitals.

<sup>2</sup> Tuberculosis hospitals only;



# 6.—Number and Bed Capacity of Hospitals (Public, Private and Federal) Operating in Canada, by Province and Type, 1965

Province or Territory and Category	General and Allied Special								
	General			Allied Special			Totals, General and Allied Special		
	Hos- pitals	Beds	Beds per 1,000 Popu- lation <sup>1</sup>	Hos- pitals	Beds	Beds per 1,000 Popu- lation <sup>1</sup>	Hos- pitals	Beds	Beds per 1,000 Popu- lation <sup>1</sup>
	No.	No.	No.	No.	No.	No.	No.	No.	No.
<b>Newfoundland—</b>									
Public.....	32	2,472	5.0	14	188	0.4	46	2,660	5.3
Private.....	—	—	—	—	—	—	—	—	—
Federal.....	1	35	0.1	—	—	—	1	35	0.1
<b>Prince Edward Island—</b>									
Public.....	8	692	6.4	1	30	0.3	9	722	6.7
Private.....	—	—	—	—	—	—	—	—	—
Federal.....	1	10	0.1	—	—	—	1	10	0.1
<b>Nova Scotia—</b>									
Public.....	44	4,089	5.4	3	185	0.2	47	4,274	5.6
Private.....	1	5	—	—	—	—	1	5	—
Federal.....	5	645	0.8	—	—	—	5	645	0.8
<b>New Brunswick—</b>									
Public.....	35	3,493	5.6	3	184	0.3	38	3,677	5.9
Private.....	—	—	—	—	—	—	—	—	—
Federal.....	3	360	0.6	—	—	—	3	360	0.6
<b>Quebec—</b>									
Public.....	130	25,629	4.5	39	5,631	1.0	169	31,260	5.5
Private.....	34	1,074	0.2	56	1,850	0.3	90	2,924	0.5
Federal.....	7	1,145	0.2	7	1,130	0.2	14	2,275	0.4
<b>Ontario—</b>									
Public.....	178	35,954	5.3	41	5,500	0.8	219	41,454	6.2
Private.....	18	742	0.1	71	1,759	0.3	89	2,501	0.4
Federal.....	12	3,673	0.5	5	176	—	17	3,849	0.6
<b>Manitoba—</b>									
Public.....	77	5,119	5.3	4	972	1.0	81	6,091	6.3
Private.....	5	72	0.1	1	50	0.1	6	122	0.1
Federal.....	10	838	0.9	10	37	—	20	875	0.9
<b>Saskatchewan—</b>									
Public.....	145	6,703	7.0	7	580	0.6	152	7,283	7.7
Private.....	—	—	—	—	—	—	—	—	—
Federal.....	3	156	0.2	1	4	—	4	160	0.2
<b>Alberta—</b>									
Public.....	106	8,233	5.7	29	2,522	1.7	135	10,755	7.4
Private.....	—	—	—	—	—	—	—	—	—
Federal.....	8	1,059	0.7	3	12	—	11	1,071	0.7
<b>British Columbia—</b>									
Public.....	87	9,123	5.1	15	523	0.3	102	9,646	5.4
Private.....	5	76	—	—	—	—	5	76	—
Federal.....	7	1,880	1.1	1	10	—	8	1,890	1.1
<b>Yukon and Northwest Territories—</b>									
Public.....	10	268	6.7	—	—	—	10	268	6.7
Private.....	1	13	0.3	—	—	—	1	13	0.3
Federal.....	3	236	5.9	17	78	1.9	20	314	7.8
<b>Canada—</b>									
Public.....	852	101,775	5.2	156	16,315	0.8	1,008	118,090	6.0
Private.....	64	1,982	0.1	128	3,659	0.2	192	5,641	0.3
Federal.....	60	10,037	0.5	44	1,447	0.1	104	11,484	0.6

<sup>1</sup> Based on estimated population as at June 1, 1965.

# 6.—Number and Bed Capacity of Hospitals (Public, Private and Federal) Operating in Canada, by Province and Type, 1965—concluded

Province or Territory and Category	Mental <sup>2</sup>			Tuberculosis <sup>3</sup>			Totals, All Hospitals		
	Hos-pitals	Beds	Beds per 1,000 Popu-lation <sup>1</sup>	Hos-pitals	Beds	Beds per 1,000 Popu-lation <sup>1</sup>	Hos-pitals	Beds	Beds per 1,000 Popu-lation <sup>1</sup>
<b>Newfoundland—</b>	No.	No.	No.	No.	No.	No.	No.	No.	No.
Public.....	1	826	1.7	1	278	0.6	48	3,764	7.6
Private.....	—	—	—	—	—	—	—	—	—
Federal.....	—	—	—	—	—	—	1	35	0.1
<b>Prince Edward Island—</b>	2	398	3.7	1	90	0.8	12	1,210	11.2
Public.....	—	—	—	—	—	—	—	—	—
Private.....	—	—	—	—	—	—	1	10	0.1
Federal.....	—	—	—	—	—	—	—	—	—
<b>Nova Scotia—</b>	10	2,963	3.9	2	460	0.6	59	7,697	10.1
Public.....	—	—	—	—	—	—	1	5	—
Private.....	—	—	—	—	—	—	5	645	0.8
Federal.....	—	—	—	—	—	—	—	—	—
<b>New Brunswick—</b>	4	2,018	3.2	3	399	0.6	45	6,094	9.8
Public.....	—	—	—	—	—	—	—	—	—
Private.....	—	—	—	—	—	—	3	360	0.6
Federal.....	—	—	—	—	—	—	—	—	—
<b>Quebec—</b>	28	20,304	3.6	15	1,916	0.3	212	53,480	9.5
Public.....	—	—	—	1	25	—	91	2,949	0.5
Private.....	—	—	—	—	—	—	14	2,275	0.4
Federal.....	—	—	—	—	—	—	—	—	—
<b>Ontario—</b>	27	22,326	3.3	12	1,983	0.3	258	65,763	9.8
Public.....	8	583	0.1	—	—	—	97	3,084	0.5
Private.....	—	—	—	1	155	—	18	4,004	0.6
Federal.....	—	—	—	—	—	—	—	—	—
<b>Manitoba—</b>	4	3,462	3.6	2	308	0.3	87	9,861	10.3
Public.....	—	—	—	—	—	—	6	122	0.1
Private.....	—	—	—	—	—	—	20	875	0.9
Federal.....	—	—	—	—	—	—	—	—	—
<b>Saskatchewan—</b>	4	3,529	3.7	2	303	0.3	158	11,115	11.7
Public.....	—	—	—	—	—	—	—	—	—
Private.....	—	—	—	—	—	—	4	160	0.2
Federal.....	—	—	—	—	—	—	—	—	—
<b>Alberta—</b>	8	5,495	3.8	2	562	0.4	145	16,812	11.6
Public.....	—	—	—	—	—	—	—	—	—
Private.....	—	—	—	—	—	—	11	1,071	0.7
Federal.....	—	—	—	—	—	—	—	—	—
<b>British Columbia—</b>	6	6,346	3.5	2	163	0.1	110	16,155	9.0
Public.....	1	73	—	—	—	—	6	149	0.1
Private.....	—	—	—	1	187	0.1	9	2,077	1.2
Federal.....	—	—	—	—	—	—	—	—	—
<b>Yukon and Northwest Territories—</b>	—	—	—	—	—	—	10	268	6.7
Public.....	—	—	—	—	—	—	1	13	0.3
Private.....	—	—	—	—	—	—	20	314	7.8
Federal.....	—	—	—	—	—	—	—	—	—
<b>Canada—</b>	94	67,667	3.5	42	6,462	0.3	1,144	192,219	9.8
Public.....	9	656	—	1	25	—	202	6,322	0.3
Private.....	—	—	—	2	342	—	106	11,826	0.6
Federal.....	—	—	—	—	—	—	—	—	—

<sup>1</sup> Based on estimated population as at June 1, 1965.<sup>2</sup> Mental hospitals only; exclusive of psychiatric units in other hospitals.<sup>3</sup> Tuberculosis hospitals only; exclusive of tuberculosis units in other hospitals.

Although 1965 figures on type of hospitals in operation and their rated bed capacities (Tables 5 and 6) were available for 1965 at the time of preparation of this Subsection, the most recent data obtainable for Tables 7 to 13 were for 1964.

The number of adults and children admitted to all hospitals in 1964 was 3,174,490, or 165 per 1,000 population compared with 164 in 1963; admissions to general hospitals numbered 3,020,070, or 157 per 1,000 population. The average number of persons in hospital on any particular day during 1964 was 179,700, compared with 177,300 in 1963, with general hospitals accounting for 88,500 and mental hospitals for 69,100. Occupancy rates varied according to type of hospital, being highest in public mental (106.4 p.c.) and lowest in tuberculosis (public 72.2 p.c. and private 71.9 p.c.). The occupancy rate in the largest group of hospitals—public general—decreased in 1964 to 80.8 p.c. from 81.4 p.c. in 1963.

### 7.—Movement of Patients<sup>1</sup> and Patient-Days in Operating Public, Private and Federal Hospitals, 1963 and 1964

NOTE.—Figures include estimates for non-reporting hospitals.

Type of Service and Item	1963	1964	Type of Service and Item	1963	1964
<b>PUBLIC HOSPITALS</b>			<b>PRIVATE HOSPITALS—concluded</b>		
<b>General—</b>			<b>Allied Special—</b>		
Beds set up at Dec. 31.....	96,297	99,649	Beds set up at Dec. 31.....	3,556	3,600
Admissions.....	2,771,403	2,868,015	Admissions.....	16,433	16,802
Per 1,000 population <sup>2</sup> .....	146.7	149.1	Per 1,000 population <sup>2</sup> .....	0.9	0.9
Patient-days.....	28,228,233	29,241,414	Patient-days.....	1,146,407	1,217,457
Per 1,000 population <sup>2</sup> .....	1,493.9	1,520.2	Per 1,000 population <sup>2</sup> .....	60.7	63.3
Average daily number of patients.....	77,502.0	79,894.9	Average daily number of patients.....	3,140.8	3,326.4
Per 1,000 population <sup>2</sup> .....	4.1	4.2	Per 1,000 population <sup>2</sup> .....	0.2	0.2
Percentage occupancy <sup>3</sup> .....	81.4	80.8	Percentage occupancy <sup>3</sup> .....	88.7	91.4
<b>Allied Special—</b>			<b>Mental—<sup>4</sup></b>		
Beds set up at Dec. 31.....	16,116	15,754	Beds set up at Dec. 31.....	648	706
Admissions.....	88,461	80,018	Admissions.....	3,958	4,213
Per 1,000 population <sup>2</sup> .....	4.7	4.2	Per 1,000 population <sup>2</sup> .....	0.2	0.2
Patient-days.....	4,967,046	4,754,277	Patient-days.....	215,006	246,095
Per 1,000 population <sup>2</sup> .....	262.9	247.2	Per 1,000 population <sup>2</sup> .....	11.4	12.8
Average daily number of patients.....	13,608.3	12,989.8	Average daily number of patients.....	589.1	672.4
Per 1,000 population <sup>2</sup> .....	0.7	0.7	Per 1,000 population <sup>2</sup> .....	--	--
Percentage occupancy <sup>3</sup> .....	84.3	82.6	Percentage occupancy <sup>3</sup> .....	97.4	106.1
<b>Mental—<sup>4</sup></b>			<b>FEDERAL HOSPITALS</b>		
Beds set up at Dec. 31.....	69,822	71,027	<b>General—</b>		
Admissions.....	39,559	40,457	Beds set up at Dec. 31.....	9,598	9,517
Per 1,000 population <sup>2</sup> .....	2.1	2.1	Admissions.....	83,343	82,441
Patient-days.....	24,404,858	25,059,761	Per 1,000 population <sup>2</sup> .....	4.4	4.3
Per 1,000 population <sup>2</sup> .....	1,291.5	1,302.8	Patient-days.....	2,549,217	2,565,428
Average daily number of patients.....	66,862.6	68,469.5	Per 1,000 population <sup>2</sup> .....	134.9	133.4
Per 1,000 population <sup>2</sup> .....	3.5	3.6	Average daily number of patients.....	6,984.2	7,009.4
Percentage occupancy <sup>3</sup> .....	108.4	106.4	Per 1,000 population <sup>2</sup> .....	0.4	0.4
<b>Tuberculosis—<sup>5</sup></b>			Percentage occupancy <sup>3</sup> .....	72.1	72.5
Beds set up at Dec. 31.....	7,592	5,977	<b>Allied Special—</b>		
Admissions.....	10,803	9,607	Beds set up at Dec. 31.....	1,500	1,470
Per 1,000 population <sup>2</sup> .....	0.6	0.5	Admissions.....	3,359	2,962
Patient-days.....	1,963,849	1,588,211	Per 1,000 population <sup>2</sup> .....	0.2	0.2
Per 1,000 population <sup>2</sup> .....	103.9	82.6	Patient-days.....	422,631	421,160
Average daily number of patients.....	5,380.4	4,339.4	Per 1,000 population <sup>2</sup> .....	22.4	21.9
Per 1,000 population <sup>2</sup> .....	0.3	0.2	Average daily number of patients.....	1,157.9	1,150.7
Percentage occupancy <sup>3</sup> .....	67.0	72.2	Per 1,000 population <sup>2</sup> .....	0.1	0.1
<b>PRIVATE HOSPITALS</b>			Percentage occupancy <sup>3</sup> .....	77.3	79.5
<b>General—</b>			<b>Tuberculosis—<sup>5</sup></b>		
Beds set up at Dec. 31.....	2,100	2,038	Beds set up at Dec. 31.....	634	321
Admissions.....	72,372	69,614	Admissions.....	357	361
Per 1,000 population <sup>2</sup> .....	3.8	3.6	Per 1,000 population <sup>2</sup> .....	--	--
Patient-days.....	593,112	595,392	Patient-days.....	166,171	90,078
Per 1,000 population <sup>2</sup> .....	31.4	31.0	Per 1,000 population <sup>2</sup> .....	8.8	4.7
Average daily number of patients.....	1,625.0	1,626.8	Average daily number of patients.....	455.3	246.1
Per 1,000 population <sup>2</sup> .....	0.1	0.1	Per 1,000 population <sup>2</sup> .....	--	--
Percentage occupancy <sup>3</sup> .....	78.0	80.3	Percentage occupancy <sup>3</sup> .....	71.7	71.9

<sup>1</sup> Adults and children.

<sup>2</sup> Population estimates as at June 1.

<sup>3</sup> Based on rated bed capacity.

<sup>4</sup> Mental hospitals only; does not include psychiatric units in other hospitals.

<sup>5</sup> Tuberculosis hospitals only;



Average length of stay of adults and children separated from public hospitals in 1964 was 11.5 days, the same as in 1963. The length of stay was considerably longer in chronic, convalescent and rehabilitation hospitals (151 days) than in general hospitals because of the nature of service provided. In public general hospitals, length of stay was 10.2 days (the same as in 1963), and ranged from 7.2 days in hospitals of 10-24 beds to 14.1 days in those with 1,000 or more beds. The availability of specialized and referral services in the larger hospitals has a tendency to increase the average duration of stay.

### 8.—Average Length of Stay of Adults and Children in Public General and Allied Special Hospitals, by Province, 1964

Type of Hospital	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
	days	days	days	days	days	days	days	days	days	days	days	days	days
General.....	12.2	9.5	10.6	9.9	10.2	10.9	9.1	9.5	8.9	9.6	6.6	10.8	10.2
1- 9 beds.....	—	—	10.0	7.0	9.9	—	7.9	7.5	5.1	6.0	—	—	7.5
10- 24 ".....	6.3	7.5	8.1	7.9	7.5	8.0	7.2	7.2	7.1	7.4	6.6	5.8	7.2
25- 49 ".....	7.7	7.6	8.7	7.3	7.4	9.4	7.2	7.6	6.7	7.4	—	11.1	7.7
50- 99 ".....	11.4	7.3	9.9	8.4	8.1	10.1	7.8	8.5	7.9	8.0	—	17.8	8.8
100-199 ".....	12.7	9.7	10.0	9.5	8.6	9.4	9.8	10.1	8.4	8.6	—	—	9.1
200-299 ".....	11.6	11.3	12.2	9.6	10.2	10.4	8.5	14.5	9.4	8.7	—	—	10.2
300-499 ".....	—	—	10.1	12.2	10.6	11.1	9.7	11.4	9.4	10.9	—	—	10.8
500-999 ".....	26.6	—	14.2	15.5	12.5	11.3	11.7	13.0	10.1	11.5	—	—	12.0
1,000 or more beds.	—	—	—	—	13.3	14.3	—	—	15.2	14.2	—	—	14.1
Allied Special—													
Chronic, conva-													
lescent and re-													
habilitation.....	115.6	63.8	41.2	46.2	170.0	178.9	85.9	254.5	195.5	51.0	—	—	151.0
Maternity.....	—	—	6.3	8.7	7.0	6.5	—	—	5.4	6.2	—	—	6.6
Other.....	6.2	—	—	39.3	25.2	10.3	—	3.5	8.4	1.6	—	—	15.2
All Public Hospitals.....	12.5	9.8	10.6	10.3	12.0	12.3	10.8	10.3	10.7	9.8	6.6	10.8	11.5

Total full-time personnel employed in all Canadian hospitals in 1964 was estimated at 259,900, an increase of 4.6 p.c. over 1963. The ratio of full-time personnel per 100 rated beds amounted to 166.7 in general and allied special hospitals, 55.2 in mental hospitals and 82.1 in tuberculosis sanatoria. Analysis of general hospitals on a provincial basis reveals that the number of full-time employees per 100 rated beds ranged between 131.1 in Prince Edward Island and 210.6 in Quebec.

### 9.—Full-Time Personnel Employed in Operating Public, Private and Federal Hospitals, by Province, 1964

NOTE.—Figures include estimates for non-reporting hospitals.

Province or Territory	General		General and Allied Special		Mental <sup>1</sup>		Tuberculosis <sup>2</sup>	
	Number	Per 100 Rated Beds	Number	Per 100 Rated Beds	Number	Per 100 Rated Beds	Number	Per 100 Rated Beds
Newfoundland.....	4,194	172.9	4,407	170.9	650	78.7	212	76.3
Prince Edward Island.....	907	131.1	943	130.6	242	60.8	85	94.4
Nova Scotia.....	8,152	174.5	8,455	174.1	1,621	54.2	458	130.1
New Brunswick.....	7,253	190.9	7,484	187.2	846	53.4	482	85.9
Quebec.....	56,857	210.6	64,913	184.6	9,382	49.8	1,162	69.7
Ontario.....	70,303	181.7	77,250	167.8	13,658	61.7	1,266	78.2
Manitoba.....	9,714	170.1	11,101	163.9	1,623	46.9	347	75.4
Saskatchewan.....	10,660	155.3	11,006	147.7	1,905	54.0	321	102.9
Alberta.....	14,388	155.6	16,379	140.0	2,555	51.3	454	80.1
British Columbia.....	15,830	145.7	16,384	143.8	3,362	53.9	408	97.4
Yukon Territory.....	147	100.7	153	95.0	—	—	—	—
Northwest Territories.....	335	80.1	388	80.7	—	—	—	—
Canada.....	198,740	179.8	218,863	166.7	35,849	55.2	5,195	82.1

<sup>1</sup> Mental hospitals only; exclusive of psychiatric units in other hospitals.

<sup>2</sup> Tuberculosis hospitals only;

exclusive of tuberculosis units in other hospitals.

In 1964, paid hours of work by personnel in public hospitals per patient-day of care amounted to 12.7 hours; in private hospitals 6.3 hours; and in federal hospitals 9.5 hours. Paid hours of work by public general hospital personnel per patient-day of care was 13.6 hours, slightly higher than the 13.2 hours recorded in 1963. Hospitals with 1,000 or more beds averaged 16.0 hours per patient-day compared with 9.2 hours for hospitals in the 10-24 bed range.

Total income of all public hospitals amounted to \$1,148,000,000 in 1964, an increase of 10.8 p.c. over the previous year. Most of the revenue was derived from net in-patient earnings, varying in proportion from 74.7 p.c. for mental hospitals to 94.2 p.c. for maternity hospitals. Total expenditures for 1964 were \$1,194,000,000, a rise of 10.8 p.c. over the 1963 total. Gross salaries and wages were the principal component, representing 64.3 p.c. of the total in general hospitals. Cost per patient-day of care in general hospitals advanced to \$31.00, or 8.5 p.c. over the previous year. Costs were directly related to size of hospital, increasing from \$22.19 in 10-24 bed hospitals to \$38.02 in the largest hospitals. Among the provinces, general hospitals in Prince Edward Island recorded the lowest cost per patient-day (\$22.76), and Quebec hospitals showed the highest (\$36.06).

#### 10.—Revenues and Expenditures of Operating Public Hospitals, by Type, 1964

NOTE.—Figures include estimates for non-reporting hospitals.

Type of Hospital	Operating Hospitals	Revenues				Expenditures				
		Net In-patient Earnings	Net Out-patient Earnings	Grants and Other Income	Total	Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Other	Total
	No.	p.c.	p.c.	p.c.	\$'000	p.c.	p.c.	p.c.	p.c.	\$'000
General.....	845	88.4	5.3	6.3	868,226	64.3	3.3	3.9	28.5	906,864
1- 9 beds.....	37	85.8	8.1	6.1	1,979	62.8	3.3	3.7	30.2	2,071
10- 24 ".....	202	87.5	6.2	6.3	18,457	59.1	3.1	4.7	33.1	19,840
25- 49 ".....	194	89.5	5.3	5.2	39,431	60.0	2.8	4.3	32.9	41,365
50- 99 ".....	140	90.7	4.7	4.6	64,840	63.2	2.8	4.2	29.8	67,177
100-199 ".....	131	89.7	5.1	5.2	144,026	64.2	3.1	4.1	28.6	150,785
200-299 ".....	55	88.8	5.3	5.9	109,333	63.1	3.2	4.0	29.7	115,281
300-499 ".....	48	87.7	5.8	6.5	167,739	65.0	3.2	3.8	28.0	173,337
500-999 ".....	31	87.4	5.4	7.2	223,654	64.9	3.5	4.0	27.6	233,458
1,000 or more beds..	7	87.3	4.9	7.8	98,764	66.3	3.6	3.7	26.4	103,550
Allied Special—										
Chronic, conva-										
lescent and re-										
habilitation.....	96	91.8	1.4	6.8	59,100	67.8	1.2	2.4	28.6	61,272
Maternity.....	8	94.2	1.1	4.7	6,285	67.9	3.6	2.3	26.2	6,794
Other.....	47	71.7	8.3	20.0	12,099	64.0	1.6	2.4	32.0	13,001
Mental.....	91	74.7	0.4	24.9	177,374	68.7	0.7	2.7	27.9	179,645
Tuberculosis.....	42	86.3	1.9	11.8	24,472	65.8	1.1	1.9	31.2	26,477

#### 11.—Revenues and Expenditures of Operating Public General Hospitals, by Province, 1964

NOTE.—Figures include estimates for non-reporting hospitals.

Province or Territory	Operating Hospitals	Total Revenue	Expenditures				
			Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Other	Total
	No.	\$'000	p.c.	p.c.	p.c.	p.c.	\$'000
Newfoundland.....	32	15,600	53.1	3.8	5.6	37.5	17,087
Prince Edward Island.....	8	3,677	55.7	3.2	4.0	37.1	3,786
Nova Scotia.....	44	32,064	57.8	3.2	3.8	35.2	32,490
New Brunswick.....	34	29,694	57.8	3.3	4.0	34.9	29,889
Quebec.....	128	238,656	65.3	3.3	4.0	27.4	259,866
Ontario.....	175	326,572	65.1	3.3	3.8	27.8	332,299
Manitoba.....	77	39,337	64.7	3.4	4.8	27.1	39,376
Saskatchewan.....	145	48,349	64.3	3.1	3.9	28.7	50,888
Alberta.....	106	60,172	62.2	3.2	3.8	30.8	63,615
British Columbia.....	86	72,951	67.0	3.3	3.8	25.9	76,304
Yukon Territory.....	2	156	55.7	3.8	5.2	35.3	156
Northwest Territories.....	8	998	55.5	2.0	2.2	40.3	1,128

**12.—Revenues and Expenditures of Operating Public Hospitals per Patient-Day  
(excluding Newborn), 1964**

Type of Hospital	Operating Hospitals	Revenues				Expenditures				
		Net In-patient Earnings	Net Out-patient Earnings	Grants and Other Income	Total	Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Other	Total
	No.	\$	\$	\$	\$	\$	\$	\$	\$	\$
General.....	845	26.23	1.58	1.87	29.68	19.92	1.01	1.23	8.84	31.00
1- 9 beds.....	37	19.70	1.86	1.40	22.96	15.06	0.78	0.90	7.24	23.98
10- 24 ".....	202	18.10	1.29	1.26	20.65	13.11	0.68	1.06	7.34	22.19
25- 49 ".....	194	19.27	1.16	1.11	21.54	13.56	0.64	0.98	7.41	22.59
50- 99 ".....	140	20.90	1.08	1.06	23.04	15.08	0.68	1.00	7.12	23.88
100-199 ".....	131	24.51	1.40	1.41	27.32	18.35	0.90	1.16	8.19	28.60
200-299 ".....	55	25.61	1.52	1.69	28.82	19.19	0.97	1.21	9.02	30.39
300-499 ".....	48	27.31	1.81	2.03	31.15	20.92	1.05	1.22	9.00	32.19
500-999 ".....	31	30.28	1.86	2.50	34.64	23.48	1.25	1.43	10.00	36.16
1,000 or more beds..	7	31.66	1.77	2.84	36.27	25.23	1.37	1.39	10.03	38.02
Allied Special—										
Chronic, convalescent and rehabilitation.....	96	13.10	0.46	0.71	14.27	10.02	0.17	0.35	4.23	14.77
Maternity.....	8	33.02	0.39	1.64	35.05	25.74	1.38	0.86	9.91	37.89
Other.....	47	24.70	3.27	6.47	34.44	23.73	0.61	0.89	11.86	37.09
Mental.....	91	5.23	0.03	1.75	7.01	4.88	0.05	0.19	1.98	7.10
Tuberculosis.....	42	13.30	0.29	1.81	15.40	10.97	0.18	0.32	5.20	16.67

**13.—Revenues and Expenditures of Operating Public Hospitals per Patient-Day  
(excluding Newborn), by Province, 1964**

Province and Type of Hospital	Total Revenue	Expenditures				
		Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Other	Total
	\$	\$	\$	\$	\$	\$
<b>Newfoundland—</b>						
General.....	24.00	13.96	1.00	1.47	9.84	26.27
Mental.....	10.84	6.18	0.13	0.40	4.13	10.84
Tuberculosis.....	15.43	10.30	0.23	0.51	4.39	15.43
<b>Prince Edward Island—</b>						
General.....	22.11	12.67	0.73	0.92	8.44	22.76
Allied Special—						
Chronic, convalescent and rehabilitation....	20.39	14.23	0.97	0.29	5.93	21.42
Mental.....	7.84	4.83	0.05	0.32	2.64	7.84
Tuberculosis.....	19.12	11.75	0.20	0.40	6.77	19.12
<b>Nova Scotia—</b>						
General.....	28.68	16.79	0.93	1.11	10.23	29.06
Allied Special—						
Chronic, convalescent and rehabilitation....	26.47	16.33	0.76	0.49	10.10	27.68
Maternity.....	41.94	24.08	1.11	1.11	17.51	43.81
Mental.....	6.48	4.07	0.12	0.06	2.34	6.59
Tuberculosis.....	25.73	17.30	0.75	—	7.69	25.74
<b>New Brunswick—</b>						
General.....	28.94	16.82	0.97	1.16	10.18	29.13
Allied Special—						
Chronic, convalescent and rehabilitation....	19.61	12.57	0.32	0.67	6.26	19.82
Maternity.....	46.72	27.67	0.94	0.28	23.89	52.78
Other.....	20.59	12.91	0.42	0.37	7.35	21.05



**13.—Revenues and Expenditures of Operating Public Hospitals per Patient-Day  
(excluding Newborn), by Province, 1964—concluded**

Province or Territory and Type of Hospital	Total Revenue	Expenditures				
		Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Other	Total
	\$	\$	\$	\$	\$	\$
<b>New Brunswick—concluded</b>						
Mental.....	5.89	3.84	0.05	0.17	1.83	5.89
Tuberculosis.....	18.74	12.36	0.13	0.31	5.94	18.74
<b>Quebec—</b>						
General.....	33.12	23.55	1.18	1.46	9.87	36.06
Allied Special—						
Chronic, convalescent and rehabilitation....	12.15	8.64	0.14	0.41	3.58	12.77
Maternity.....	35.27	27.62	1.16	1.06	9.82	39.66
Other.....	26.37	19.83	0.43	0.82	7.69	28.77
Mental.....	5.59	3.76	0.02	0.23	1.86	5.87
Tuberculosis.....	9.38	7.87	0.11	0.43	4.27	12.68
<b>Ontario—</b>						
General.....	31.19	20.64	1.04	1.22	8.83	31.73
Allied Special—						
Chronic, convalescent and rehabilitation....	15.11	10.68	0.17	0.80	4.14	15.29
Maternity.....	36.05	26.23	2.80	—	7.99	37.02
Other.....	75.71	45.80	1.35	1.53	33.08	81.76
Mental.....	7.97	5.90	0.06	0.17	1.84	7.97
Tuberculosis.....	17.49	11.79	0.19	0.16	5.87	18.01
<b>Manitoba—</b>						
General.....	27.18	17.60	0.93	1.30	7.38	27.21
Allied Special—						
Chronic, convalescent and rehabilitation....	18.55	13.00	0.29	0.53	4.76	18.58
Mental.....	6.39	4.58	0.07	0.18	1.55	6.38
Tuberculosis.....	11.47	7.05	0.13	0.18	4.66	12.02
<b>Saskatchewan—</b>						
General.....	24.34	16.48	0.80	0.99	7.35	25.62
Mental.....	7.74	5.58	0.03	0.18	1.95	7.74
Tuberculosis.....	16.65	11.76	0.16	0.37	4.85	17.14
<b>Alberta—</b>						
General.....	25.28	16.63	0.87	1.00	8.23	26.73
Allied Special—						
Chronic, convalescent and rehabilitation....	12.70	8.49	0.16	0.23	4.97	13.85
Maternity.....	26.73	20.30	1.39	0.75	5.84	28.28
Other.....	23.39	17.17	0.64	0.56	4.71	23.08
Mental.....	7.27	4.89	0.05	0.13	2.20	7.27
Tuberculosis.....	24.50	17.22	0.15	0.57	6.56	24.50
<b>British Columbia—</b>						
General.....	26.49	18.57	0.91	1.04	7.19	27.71
Allied Special—						
Chronic, convalescent and rehabilitation....	18.62	13.97	0.16	0.23	5.70	20.06
Maternity.....	30.70	23.44	0.94	0.87	6.66	31.91
Mental.....	7.92	5.03	0.06	0.25	2.58	7.92
Tuberculosis.....	21.76	17.24	0.23	0.34	3.95	21.76
<b>Yukon Territory—</b>						
General.....	50.25	27.97	1.91	2.61	17.76	50.25
<b>Northwest Territories—</b>						
General.....	22.25	13.97	0.51	0.58	10.12	25.18

## Subsection 2.—Notifiable Diseases and Other Health Statistics\*

**Notifiable Diseases.**—Three categories on the notifiable list established by the Dominion Council of Health continued to predominate in 1964: venereal diseases (23,401 cases), scarlet fever and streptococcal sore throat (10,605), and infectious and serum hepatitis (8,218). Together they accounted for about 73 p.c. of all new cases reported.

Since 1959, when the rate reached a high of 133.9 per 100,000 population, the incidence of scarlet fever and streptococcal sore throat has been declining, although the 1964 rate was slightly higher than that for 1963. In contrast, the rate of venereal disease notifications has risen from 97.3 per 100,000 population in 1959 to 121.7 in 1964. The incidence of viral hepatitis, after climbing alarmingly from a high of 29.9 per 100,000 population in the 1950s to 67.5 in 1961 and 1962, declined in 1964 to a level roughly midway between.

The incidence of poliomyelitis has shown the effects of control by the use of the Salk vaccine introduced in 1955 and the Sabin vaccine in 1962. In 1953, the year of highest incidence, there were 3,912 reported paralytic cases and 494 deaths compared with only 19 cases in all in 1964.

To indicate a crude death rate from communicable diseases in general, and the relationship between deaths from such diseases and deaths from all causes, the following notifiable diseases have been combined: diphtheria, malaria, measles, pertussis, scarlet fever and streptococcal sore throat, smallpox, tuberculosis, typhoid fever, typhus and other rickettsial diseases. Since 1947, when the death rate for these selected notifiable diseases was 49.5 per 100,000 population, the rate declined steadily to 21.0 in 1952, to 6.9 in 1958 and to 4.0 per 100,000 population in 1964.

\* Prepared in the Public Health Section, Health and Welfare Division, Dominion Bureau of Statistics.

## 14.—Reported Cases of Selected Notifiable Diseases and Rates per 100,000 Population, 1961-64

Inter-national List No.	Disease	Cases				Rates per 100,000 Population			
		1961 <sup>1</sup>	1962 <sup>1</sup>	1963	1964	1961 <sup>1</sup>	1962 <sup>1</sup>	1963	1964
		No.	No.	No.	No.				
044	Brucellosis (undulant fever)...	109	98	57	54	0.6	0.5	0.3	0.3
764	Diarrhoea of the newborn, epidemic.....	81	82	98	114	0.7	0.7	0.9	1.0
055	Diphtheria.....	91	71	75	25	0.5	0.4	0.4	0.1
045, 046, 048	Dysentery <sup>2</sup> .....	3,250	2,910	4,166	3,891	17.8	15.7	22.0	20.2
046	Amoebic.....	12	7	20	50	0.1	2	0.1	0.3
045	Bacillary.....	1,479	1,241	1,448	1,246	8.1	6.7	7.7	7.0
082.0	Encephalitis, infectious.....	1	4	58	5	2	2	0.5	2
049.0, 042.1, 049.2	Food poisoning.....	1,288	1,412	1,116	1,582	10.7	11.6	9.0	12.5
092, N998.5	Hepatitis, infectious (including serum hepatitis).....	12,314	12,538	10,080	8,218	67.5	67.5	53.3	42.7
080.2, 082.1	Meningitis, viral or aseptic.....	412	279	298	163	3.5	2.3	2.3	1.3
057	Meningococcal infections.....	122	110	111	115	0.7	0.6	0.6	0.6
766	Peromphigus neonatorum (impetigo of the newborn).....	13	13	3	11	0.1	0.1	2	0.1
056	Pertussis (whooping cough)...	5,476	8,076	6,134	4,844	30.0	43.5	32.5	25.2
080.0, 080.1	Poliomyelitis, paralytic.....	188	89	122	19	1.0	0.5	0.7	0.1
050, 051	Scarlet fever and streptococcal sore throat.....	13,060	10,241	9,922	10,605	71.6	55.1	52.5	55.1
040, 041	Typhoid and paratyphoid fever.....	266	277	147	195	1.5	1.5	0.8	1.0
030-034	Venereal diseases <sup>2</sup> .....	18,774	20,133	22,199	23,401	102.9	108.4	117.5	121.7
023, 024, 026-029	Gonorrhoea.....	16,460	17,697	19,411	20,688	90.2	95.3	102.7	107.2
	Syphilis.....	2,311	2,432	2,785	2,771	12.7	13.1	14.7	14.4

<sup>1</sup> Includes venereal diseases only for the Northwest Territories.  
type not specified.

<sup>2</sup> Less than 0.05 per 100,000 population.

<sup>2</sup> Includes other cases and cases where

### 15.—Reported Cases of Selected Notifiable Diseases and Rates per 100,000 Population, by Province, 1964

Inter- national List No.	Disease	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.
NUMBER OF CASES													
044	Brucellosis (undulant fever)	—	—	—	—	40	4	8	—	2	—	—	—
764	Diarrhoea of the newborn, epidemic.....	—	—	37	—	—	1	17	1	8	52	—	—
055	Diphtheria.....	3	2	—	1	5	3	2	8	1	—	—	—
045, 046, 048	Dysentery <sup>2</sup> .....	8	4	1,834	11	139	520	390	246	251	445	—	43
046	Amoebic.....	—	—	—	—	—	—	—	45	—	—	—	—
045	Bacillary.....	8	—	60	8	139	519	44	201	235	131	—	1
082.0	Encephalitis, infectious....	1	1	—	1	—	1	1	1	1	—	—	—
049.0, 042.1, 049.2	Food poisoning.....	2	6	216	7	779	1	83	165	94	229	1	—
092, N998.5	Hepatitis, infectious (in- cluding serum hepatitis)	81	99	621	299	548	2,571	702	913	1,299	1,062	—	23
080.2, 082.1	Meningitis, viral or aseptic	1	1	7	17	21	1	33	10	35	37	—	2
057	Meningococcal infections...	29	9	6	4	10	28	9	4	5	11	—	—
766	Pemphigus neonatorum (impetigo of the newborn)	—	1	3	2	—	1	—	—	—	5	—	1
056	Pertussis (whooping cough)	131	100	27	4	2,093	1,905	33	86	281	181	3	—
080.0, 080.1	Poliomyelitis, paralytic....	—	—	—	3	11	2	—	—	1	1	1	—
050, 051	Scarlet fever and strepto- coccal sore throat.....	405	2,071	1,173	9	439	2,775	95	866	1,601	982	188	1
040, 041	Typhoid and paratyphoid fever.....	3	1	20	12	85	32	7	15	8	11	—	1
030-034	Veneral diseases.....	300	21	541	431	2,958	3,735	2,309	2,131	4,064	6,445	93	373
020-021.3, 023, 024, 026-029	Gonorrhoea.....	288	19	491	409	2,323	2,654	2,141	2,001	3,954	5,883	87	373
036-038	Syphilis.....	12	2	50	22	630	1,081	168	188	110	562	6	—
036-038	Other.....	—	1	—	—	—	—	—	2	—	—	—	—
RATES PER 100,000 POPULATION													
044	Brucellosis (undulant fever)	—	—	—	—	0.7	0.1	0.8	—	0.1	—	—	—
764	Diarrhoea of the newborn, epidemic.....	—	—	4.9	—	—	1	1.8	1	0.6	3.0	—	—
055	Diphtheria.....	0.6	1.9	—	0.2	0.1	3	0.2	0.8	0.1	—	—	—
045, 046, 048	Dysentery <sup>2</sup> .....	1.6	3.7	241.3	1.8	2.5	7.9	40.7	26.1	17.5	25.6	—	172.0
046	Amoebic.....	—	—	—	—	—	3	—	4.8	—	0.2	—	—
045	Bacillary.....	1.6	—	7.9	1.3	2.5	7.9	4.6	21.3	16.4	7.5	—	4.0
082.0	Encephalitis, infectious....	0.2	1	—	0.2	—	1	0.1	0.1	0.1	—	—	—
049.0, 042.1, 049.2	Food poisoning.....	0.4	5.6	28.4	1.1	14.0	1	8.7	17.5	6.6	13.2	6.3	—
092, N998.5	Hepatitis, infectious (in- cluding serum hepatitis)	16.5	92.5	81.7	48.5	9.9	39.0	73.3	96.8	90.7	61.1	—	92.0
080.2, 082.1	Meningitis, viral or aseptic	0.2	1	0.9	2.8	0.4	1	3.4	1.1	2.4	2.1	—	8.0
057	Meningococcal infections...	5.9	8.4	0.8	0.6	0.2	0.4	0.9	0.4	0.3	0.6	—	—
766	Pemphigus neonatorum (impetigo of the newborn)	—	1	0.4	0.3	—	1	—	—	—	0.3	—	4.0
056	Pertussis (whooping cough)	26.7	93.5	3.6	0.6	37.6	28.9	3.4	9.1	19.6	10.4	18.8	—
080.0, 080.1	Poliomyelitis paralytic....	—	—	—	0.5	0.2	3	—	—	0.1	0.1	6.3	—
050, 051	Scarlet fever and strepto- coccal sore throat.....	82.5	1,935.5	154.3	1.5	7.9	42.1	9.9	91.8	111.8	56.5	1,175.0	4.0
040, 041	Typhoid and paratyphoid fever.....	0.6	0.9	2.6	1.9	1.5	0.5	0.7	1.6	0.6	0.6	—	4.0
030-034	Veneral diseases.....	61.1	19.6	71.2	69.9	53.2	56.7	241.0	226.0	283.8	370.8	581.3	1,492.0
020-021.3, 023, 024, 026-029	Gonorrhoea.....	58.7	17.8	64.6	66.3	41.9	40.3	223.5	212.2	276.1	338.5	543.8	1,492.0
036-038	Syphilis.....	2.4	1.9	6.6	3.6	11.3	16.4	17.5	13.6	7.7	32.3	37.5	—
036-038	Other.....	—	1	—	—	—	—	—	0.2	—	—	—	—

<sup>1</sup> Not reportable.  
population.<sup>2</sup> Includes other cases where type not specified.<sup>3</sup> Less than 0.05 per 100,000



**Subsection 3.—Numbers of Physicians and Earnings of Those in Private Practice**

**Numbers.**—According to a survey conducted by the Department of National Health and Welfare, there were 21,011 active civilian physicians in Canada in 1962; the 1962 ratio of 881 persons per physician continues the postwar trend of improvement in physician supply. Table 16 shows the historical trend since 1901 and the provincial distribution for 1962. The ratio of 748 persons per physician for British Columbia in the latest year is the most favourable supply yet achieved by a Canadian province.

**16.—Active Civilian Physicians and Population per Physician, 1901-62, and by Province, 1962**

Year	Active Civilian Physicians		Province or Territory	Active Civilian Physicians	
	Number	Population per Physician		Number	Population per Physician
<b>Census Data—</b>			Newfoundland.....	304	1,539
1901.....	5,475	972	Prince Edward Island.....	87	1,218
1911.....	7,411	970	Nova Scotia.....	735	1,012
1921.....	8,706	1,008	New Brunswick.....	458	1,321
1931.....	10,020	1,034	Quebec.....	5,932	902
1941.....	10,723	1,072	Ontario.....	7,826	808
			Manitoba.....	1,085	859
			Saskatchewan.....	919	1,010
<b>Register of Physicians—</b>			Alberta.....	1,367	998
1951.....	14,163	989	British Columbia.....	2,210	748
1954.....	15,651	977	Yukon and Northwest Territories.....	25	1,560
1959.....	19,300	906			
1962.....	21,011	881	<b>Canada.....</b>	<b>21,011<sup>1</sup></b>	<b>881</b>

<sup>1</sup> Includes 63 not allocated by province.

Table 17 shows that the physicians of Canada are more highly concentrated in the larger centres of population than is the population generally, and that this concentration has been increasing for both the total population and physicians. In addition, the percentage increase of the 1962 total of physicians in centres of fewer than 10,000 population over that for 1951 was less (5.8) than the percentage increase over 1951 of the 1959 total in these areas (11.9), indicating a decrease in the total number of physicians in these areas during the 1959-62 period. Although the trends indicated in these data are slightly exaggerated by changes between censuses in the make-up of census metropolitan areas, it is clear that there is an over-all widening of the traditional disparity in availability of physician services between smaller localities and large urban centres.

**17.—Percentages of Population and of Active Civilian Physicians in Centres of Over or Under 10,000 Population and Percentage Increases Over 1951**

Item	Percentages of Total			Percentage Increases Over 1951		
	In Centres of—		Total	For Centres of—		Total
	10,000 or Over Population	Under 10,000 Population		10,000 or Over Population <sup>1</sup>	Under 10,000 Population	
<b>Population—</b>						
1951.....	48.2	51.8	100.0	...	...	...
1961.....	57.7	42.3	100.0	55.9	6.3	30.2
<b>Physicians—</b>						
1951.....	73.2 <sup>2</sup>	26.8	100.0	...	...	...
1954.....	73.7 <sup>2</sup>	26.3	100.0	12.3	9.3	11.5
1959.....	78.2 <sup>3</sup>	21.8	100.0	46.8	11.9	37.4
1962.....	81.0 <sup>4</sup>	19.0	100.0	64.6	5.8	48.8

<sup>1</sup> Includes all parts of census metropolitan areas, regardless of size.

<sup>2</sup> Size of place as in 1956 Census.

<sup>3</sup> Size of place as in 1961 Census.

<sup>4</sup> Size of place as in 1951 Census.

There has been little real change in recent years in the proportion of active civilian physicians who are engaged primarily in private practice; in 1951 it was 72.3 p.c., in 1959 an estimated 74.0 p.c. and in 1962 an estimated 73.4 p.c. The remainder were engaged in "other work" or were "interns, residents and fellows". In the 1959-62 period, however, a trend toward specialization was indicated by the rising proportion of specialists in private practice from 29.1 p.c. to 35.7 p.c. and of specialists in other work from 10.8 p.c. to 12.9 p.c. On the other hand, the proportion of physicians in general private practice dropped from 43.2 p.c. to 37.7 p.c. and of non-specialists in other work from 8.5 p.c. to 4.7 p.c. The increase from 8.3 p.c. to 9.0 p.c. in the proportion of physicians who were interns, residents and fellows is also indicative of increased specialization and the longer training period involved.

**Earnings.**—More than 98 p.c. of the earnings of privately practising physicians and surgeons in Canada were obtained from fees charged for individual items of professional service. As Table 18 shows, average gross earnings in 1964 from fees plus wages and salaries earned incidental to fee practice were \$30,409. This figure was 7 p.c. higher than in 1963 and 38 p.c. above the 1958 figure. The highest average gross earnings in 1964 were reported in Saskatchewan at \$36,484; in Ontario, Alberta and British Columbia they were above the national average. Average gross incomes in the remaining provinces ranged downward from \$27,922 in Manitoba to \$23,088 in Newfoundland. Generally, throughout the seven-year period 1958-64, highest average gross earnings have been most consistently reported in Ontario and the westernmost provinces.

The net returns to doctors, after deduction of the expenses of professional fee practice, reveal similar geographic patterns, as seen in Table 18. Net earnings for Canada as a whole averaged \$20,374 in 1964, 9.6 p.c. higher than in 1963 and 48 p.c. above the 1958 figure. The highest provincial average net income was reported by Saskatchewan doctors at \$23,879 followed by Ontario doctors at \$22,247. The lowest average net income was reported in Prince Edward Island.

**18.—Average Gross and Net Professional Incomes of Physicians and Surgeons, by Province, 1958-64**

Province	1958*	1959*	1960*	1961*	1962*	1963*	1964
<b>GROSS PROFESSIONAL INCOMES<sup>1</sup></b>							
	\$	\$	\$	\$	\$	\$	\$
Newfoundland <sup>2</sup> .....	19,199	19,289	21,741	20,945	19,379	21,288	23,088
Prince Edward Island.....	17,809	18,854	20,177	20,001	19,676	23,413	23,157
Nova Scotia.....	19,667	21,341	22,802	23,242	23,302	23,455	25,739
New Brunswick.....	19,538	18,918	22,523	24,220	23,978	26,376	27,802
Quebec.....	18,264	18,721	19,656	22,118	23,418	25,748	26,813
Ontario.....	23,415	24,153	25,534	27,206	27,779	30,641	33,201
Manitoba.....	24,106	26,436	24,751	27,897	27,774	27,609	27,922
Saskatchewan.....	23,511	23,699	27,102	27,103	23,238	35,657	36,484
Alberta.....	24,823	25,254	28,032	29,221	31,187	30,912	32,690
British Columbia.....	24,909	26,628	28,066	27,867	27,498	27,670	30,510
<b>Average for All Provinces....</b>	<b>22,014</b>	<b>22,811</b>	<b>24,174</b>	<b>25,733</b>	<b>26,180</b>	<b>28,523</b>	<b>30,409</b>
<b>NET PROFESSIONAL INCOMES<sup>2</sup></b>							
	\$	\$	\$	\$	\$	\$	\$
Newfoundland <sup>2</sup> .....	14,012	13,970	15,961	15,120	14,753	15,653	16,981
Prince Edward Island.....	10,237	11,427	12,589	13,119	15,448	15,477	16,478
Nova Scotia.....	12,862	14,820	16,074	16,070	15,925	15,839	17,851
New Brunswick.....	12,409	12,372	15,535	16,288	16,418	17,701	19,255
Quebec.....	11,136	11,795	12,870	14,454	15,173	16,696	18,534
Ontario.....	14,993	15,605	16,754	17,682	18,306	20,492	22,247
Manitoba.....	13,566	14,800	15,338	15,148	15,998	17,320	17,879
Saskatchewan.....	14,527	15,096	15,955	15,843	14,619	21,625	23,879
Alberta.....	14,815	15,941	17,754	17,925	18,612	19,111	21,117
British Columbia.....	15,488	16,953	17,600	17,067	17,284	17,464	19,560
<b>Average for All Provinces....</b>	<b>13,729</b>	<b>14,537</b>	<b>15,671</b>	<b>16,397</b>	<b>16,888</b>	<b>18,590</b>	<b>20,374</b>

<sup>1</sup> Includes incidental wages and salaries.

<sup>2</sup> Includes the salaries of Cottage Hospital Medical Plan doctors.

\* Gross professional incomes less expenses of practice.

## PART II.—PUBLIC WELFARE AND SOCIAL SECURITY

Responsibility for social welfare is shared by all levels of government. Comprehensive income-maintenance measures such as the Canada Pension Plan, old age security pensions, family allowances, youth allowances and unemployment insurance, where nation-wide co-ordination is required, are administered federally. The Federal Government gives substantial aid to the provinces in meeting the costs of public assistance and also provides services for special groups such as veterans, Indians, Eskimos and immigrants. The Department of National Health and Welfare is generally responsible for federal welfare matters although the Departments of Veterans Affairs, Indian Affairs and Northern Development and Manpower and Immigration operate the special programs.

Administration of welfare services is primarily the responsibility of the provinces but the provision of services is often assumed by local authorities, generally with financial aid from the province.

Co-ordination in welfare matters between different levels of government and between government and voluntary authorities is facilitated by the National Council of Welfare, an advisory body to the Minister of National Health and Welfare. The Council consists of the federal Deputy Minister of Welfare who acts as chairman, the provincial deputy ministers of welfare, and ten other persons appointed for three-year terms by the Governor in Council.

### Section 1.—Federal Government Programs

#### Subsection 1.—Canada Pension Plan

The Canada Pension Plan, established under legislation enacted in 1965, is an important new component in Canada's social security system. The Plan is designed to provide, for members of the labour force, an organized program whereby each contributor builds up a right to a retirement pension, the amount of which is related to his previous earnings pattern. It also provides benefits to a disabled contributor and his dependent children and, at the contributor's death, a lump-sum death benefit together with monthly benefits for his widow and children. The Plan, together with its Quebec counterpart, will apply to about 92 p.c. of the Canadian labour force. Employees who earn \$600 or less in a calendar year or self-employed persons who earn less than \$800 do not pay contributions for that year. The collection of contributions began in January 1966.

The Canada and Quebec Pension Plans are closely co-ordinated and operate together as one and the same Plan. If an employee covered by the Canada Pension Plan takes employment in Quebec, or if a self-employed person moves his residence to that province, his contributions to the Quebec Pension Plan will produce the same benefits as if they had been made to the Canada Pension Plan. The reverse also applies.

The Canada Pension Plan is financed by contributions of employees, employers and self-employed persons and by interest earned by the fund. On earnings above \$600, which amount is exempt from contributions, and up to the present maximum on pensionable earnings of \$5,000 a year, the employee contributes 1.8 p.c. and his employer pays a matching amount. Self-employed people contribute at the combined rate of 3.6 p.c., also on annual earnings between \$600 and \$5,000. The contributory limits will be adjusted with changing economic conditions. The initial limits of \$600 and \$5,000 will prevail for the first two years of the Plan; for the next eight years these limits will be adjusted by means of a Pension Index which will reflect increases in the Consumer Price Index; after 1975, they will be adjusted according to changes in an Earnings Index which will be based on a long-term moving average of national wages and salaries. Retirement pensions under the Plan will come into effect according to the following staging: in 1967, retired contributors age 68 or over will be able to claim retirement pensions; in 1968, those who are age 67 or over can do so; in 1969, the eligible age will be 66 or over; and in 1970 and afterward, contributors age 65 or over will be eligible.



A retirement pension will be 25 p.c. of a contributor's average pensionable earnings, which will include the earnings on which contributions were made and also the \$600 exemption. In calculating a contributor's pension, his earnings for each year will be adjusted so that they will bear the same relationship to the maximum pensionable earnings in force at the time the pension begins that his earnings bore to the upper limit prevailing in the year in which they were actually received. His total adjusted pensionable earnings will be averaged over the entire period from the commencement of the program on Jan. 1, 1966, or from age 18 whichever is later, to the date the pension is first paid, but in no case will they be averaged over less than 120 months, unless a disability pension has been paid to the contributor in the interim. During the first ten years of the program, partial retirement pensions are payable; pensions become payable at full rates in 1976.

After 1975, certain periods of low earnings, or no earnings at all, can be disregarded in determining the average earnings on which retirement pensions are to be based. Contributory earnings received between ages 65 and 70 can be substituted for lower or no earnings of earlier periods of the same duration. In addition, 15 p.c. of the contributory period then remaining is dropped out, providing that the reduced period is not less than 120 months. These drop-out provisions make it possible for the person to receive a higher pension than would otherwise be the case.

A retirement pension is payable at any time between the ages of 65 and 70, provided the contributor has then retired from regular employment. If he earns up to \$900 a year, he is considered as having been retired for purposes of applying for his pension. Those taking up new employment after starting to draw a retirement pension will be required to pass an earnings test. For earnings between \$900 and \$1,500 in any year, the pension will be reduced by one half of the difference between the actual earnings and \$900, the maximum reduction in this range being \$300. When earnings exceed \$1,500, the retirement pension will be reduced by \$300 plus all earnings in excess of \$1,500. However, no reduction will be made in the pension for any month in which the pensioner's earnings are \$75 or less, no matter what his earnings are for the entire year. The pension is payable at the full rate when the person attains age 70, regardless of earnings.

Pensions for disabled contributors\* and for their dependent children will first be payable in the spring of 1970. Survivors' benefits, including pensions for widows and disabled widowers,\* orphans' benefits and the death benefit will first be payable early in 1968.

A contributor who becomes disabled after making contributions for the required period of time will be entitled to a disability pension consisting of a flat-rate component, initially \$25 monthly, and an earnings-related component amounting to 75 p.c. of a retirement pension, calculated as if he had then reached 65 years of age. In calculating this pension, earnings are averaged over the period from age 18 or Jan. 1, 1966 whichever is later, until the date the disability pension becomes payable, the minimum period for averaging being 60 months. In addition, benefits will be payable for the dependent children of a disability pensioner; that is, on behalf of unmarried children under age 18, or up to age 25 if in full-time attendance at school or university. The monthly rate is \$25 for each of the first four eligible children and \$12.50 for each additional child.

A widow age 45 to 64 at her husband's death, a disabled widow\* under age 65, and a widow under age 65 with dependent children will be entitled to a widow's pension if her husband has made the required number of contributions. It consists of a flat-rate component, initially \$25 a month, and an earnings-related component equal to 37.5 p.c. of the retirement pension payable to her deceased husband. If he was under age 65 at the time of his death the pension is calculated as if he had actually attained age 65 at that time. A widow who is not disabled and who does not have dependent children receives a reduced pension if she is under age 45 at the death of her husband; if she is under age 35 no widow's pension is payable until she reaches 65 years of age unless she becomes disabled in the interim.

\* A contributor, a widow or a widower is considered disabled if he or she has a physical or mental disability so severe and likely to continue so long that he cannot get steady work.

Benefits payable for the children of a deceased contributor are the same as those provided for the dependent children of a disabled pensioner.

A woman widowed at age 65 or over or a widow reaching age 65 will receive a pension of 60 p.c. of her husband's retirement pension. If the husband was under age 65 when he died, his retirement pension is calculated as if he had then attained age 65. For widows age 65 or over who will also be entitled to retirement pensions of their own, two alternative formulae are provided for the re-calculation of their widow's pension, so that they may receive the more advantageous amount.

A pension is provided for the disabled widower\* of a contributor if he was disabled at the time of his wife's death and was, at that time, wholly or substantially maintained by her. The rate of his pension is the same as that for a woman widowed between age 45 and 65. For a disabled widower reaching age 65, or for a person becoming a disabled widower after age 65 the rate of pension is the same as for a widow of the same age. A disabled widower entitled to his own retirement pension is also provided with two alternative formulae for purposes of calculating his total retirement income. He must continue to prove disability for the duration of his pension.

A lump sum death benefit is payable subject to the same qualifying conditions as pertain to other survivors' benefits. The amount of the benefit is six times the monthly retirement benefit that is being (or would be) paid to the contributor in the month of his death, but cannot exceed 10 p.c. of the maximum on pensionable earnings for that year. If the contributor is under 65 years of age when he dies, the retirement pension will be calculated as if he were 65 at the date of death.

Canada Pension Plan benefits, once they have commenced to be paid, will be subject to annual adjustments in accordance with upward changes in the Pension Index. Benefits are payable no matter where the beneficiary may live, whether in Canada or any other country.

The Department of National Health and Welfare administers the Canada Pension Plan through its head office in Ottawa and District Offices located in various centres across Canada. Contributions are collected by the Department of National Revenue. Employers are responsible for making deductions of contributions from their employees' earnings and for remitting these, along with their own matching contributions, to the Department of National Revenue. Self-employed persons make payments directly at the time such people normally pay their income tax. Everyone covered by the Plan must obtain a Social Insurance Number in order to identify and maintain his individual Record of Earnings. Even if a person does not obtain a number, he is still required to make contributions and any earnings received before a number is obtained may not be taken into account when calculating that individual's pension.

Appeals in connection with coverage and contributions may be made to the Minister of National Revenue. If an employee is not then satisfied, he may appeal further to the Pension Appeals Board whose decision is final. A self-employed contributor follows the appeal procedures of the Income Tax Act. With regard to benefits, there is a three-stage appeal procedure: first, to the Minister of National Health and Welfare; secondly, to a Review Committee; and thirdly, to the Pension Appeals Board whose decision is final and binding.

Contributions to the Plan, other than those required for immediate administrative costs and payment of benefits, may be borrowed by a provincial government on the basis of the relationship between contributions by residents of that province and all contributions at rates of interest determined in accordance with the legislation. Provision is made for the establishment of an advisory committee to review the operation of the Act, the state of the investment fund, and the adequacy of the coverage and benefits provided under the legislation. The legislation provides authority whereby the government may enter

\* See footnote, p. 310.

into reciprocal arrangements with other countries where there is a common interest in as full coverage as possible and in the portability of pensions and where mutually satisfactory agreements can be reached.

### Subsection 2.—Old Age Security

Under the Old Age Security Act of 1951, as amended, a universal pension of \$75 a month is payable by the Federal Government to all persons who meet the residence and age qualifications. Until 1965, the pension was payable to those age 70 or over but in 1966 it is payable to persons age 69 or over, in 1967 to those age 68 or over, and so on until by 1970 it will be payable to everyone age 65 or over. In 1968 and succeeding years, the amount of the pension will be adjusted in line with changes in the Pension Index developed for the Canada Pension Plan (see p. 309).

The old age security pension is payable to a person of attained age who has resided in Canada for ten years immediately preceding his application for the pension. Any gaps in the ten-year period may be offset if the applicant had resided in Canada in earlier years for periods of time equal in total to double the length of the gaps; in this case, however, the applicant must also have resided in Canada for one year immediately before his application for pension. The pension is also payable to persons of attained age who have left Canada before reaching that age but who have had 40 years of residence in Canada since age 18. A pensioner may absent himself from Canada and continue to receive payments. If he has lived in Canada for 25 years since his 21st birthday, payment outside of Canada may continue indefinitely; if not, payment is continued for six months, in addition to the month of departure, and is then suspended, to be resumed only with the month in which he returns to Canada.

The program is administered by the Department of National Health and Welfare through regional offices located in each provincial capital, to which application is made for pension. It is financed through a 3-p.c. sales tax, a 3-p.c. tax on corporation income and, subject to a limit of \$120 a year, a 4-p.c. tax on taxable personal income.

### 1.—Old Age Security Statistics, by Province, Year Ended Mar. 31, 1966 with Totals for 1964-66

Province	Pensioners in March	Net Pensions Paid during Fiscal Year	Province or Territory	Pensioners in March	Net Pensions Paid during Fiscal Year
	No.	\$		No.	\$
Newfoundland.....	21,184	17,586,159	Alberta.....	74,514	62,793,976
Prince Edward Island.....	8,809	7,447,170	British Columbia.....	135,556	115,292,880
Nova Scotia.....	49,801	42,048,599	Yukon Territory.....	296	254,880
New Brunswick.....	36,852	30,994,768	Northwest Territories.....	506	405,690
Quebec.....	242,865	201,031,152			
Ontario.....	402,997	337,194,513	<b>Canada.....1966</b>	<b>1,105,776</b>	<b>927,299,487</b>
Manitoba.....	65,758	55,494,509	<b>1965</b>	<b>993,582</b>	<b>885,294,468</b>
Saskatchewan.....	66,638	56,755,191	<b>1964</b>	<b>971,801</b>	<b>808,331,300</b>

### Subsection 3.—Family Allowances

The Family Allowances Act of 1944 is designed to assist in providing equal opportunity for all Canadian children. The allowances do not involve a means test and are paid from the federal Consolidated Revenue Fund. They do not constitute taxable income but there is a smaller income tax exemption for children eligible for allowances.

Allowances are payable in respect of every child under the age of 16 years who was born in Canada, or who has been a resident of the country for one year, or whose father or mother was domiciled in Canada for three years immediately prior to the birth of the child. Payment is made by cheque each month, normally to the mother, although any person who substantially maintains the child may be paid the allowance on his behalf. Allowances are



paid at the monthly rate of \$6 for each child under 10 years of age and \$8 for each child age 10 or over but under 16 years. If the allowances are not spent for the purposes outlined in the Act, payment may be discontinued or made to some other person or agency on behalf of the child. Allowances are not payable for any child who fails to comply with provincial school regulations or on behalf of a girl who is married and under 16 years of age.

The program is administered by the Department of National Health and Welfare through regional offices located in each provincial capital. The Regional Director located at Edmonton also administers the accounts of residents in the Yukon and Northwest Territories.

The Federal Government pays family assistance, at the rates applicable for family allowances, for each child under 16 years of age resident in Canada and supported by an immigrant who has landed for permanent residence in Canada, or by a Canadian returned to Canada to reside permanently. The assistance, which is payable monthly for the first year of the child's residence in Canada, is intended to bridge the gap until the child becomes eligible for family allowances.

## 2.—Family Allowances Statistics, by Province, Year Ended Mar. 31, 1966 with Totals for 1964-66

Province or Territory	Families Receiving Allowance in March	Children for Whom Allowance Paid in March	Average Number of Children per Family in March	Average Allowance <sup>1</sup>		Net Total Allowances Paid during Fiscal Year
				Per Family	Per Child	
	No.	No.	No.	\$	\$	\$
Newfoundland.....	69,346	210,512	3.04	20.40	6.71	16,945,059
Prince Edward Island.....	14,054	39,632	2.82	19.03	6.75	3,231,716
Nova Scotia.....	104,856	267,689	2.55	17.18	6.74	21,636,528
New Brunswick.....	82,851	233,724	2.82	19.05	6.76	18,982,908
Quebec.....	792,955	2,043,428	2.57	17.38	6.76	164,972,052
Ontario.....	983,502	2,284,059	2.32	15.61	6.73	182,377,587
Manitoba.....	132,148	321,747	2.43	16.30	6.71	25,925,991
Saskatchewan.....	131,266	332,952	2.54	17.11	6.74	26,988,369
Alberta.....	213,489	525,859	2.46	16.58	6.74	42,345,742
British Columbia.....	254,871	589,041	2.31	15.60	6.75	47,006,572
Yukon Territory.....	2,153	5,295	2.46	16.15	6.57	424,673
Northwest Territories.....	4,145	11,119	2.68	17.76	6.63	897,627
<b>Canada.....1966</b>	<b>2,785,636</b>	<b>6,865,057</b>	<b>2.46</b>	<b>16.59</b>	<b>6.74</b>	<b>551,734,824</b>
<b>1965</b>	<b>2,746,549</b>	<b>6,817,013</b>	<b>2.48</b>	<b>16.65</b>	<b>6.72</b>	<b>545,775,231</b>
<b>1964</b>	<b>2,711,272</b>	<b>6,736,157</b>	<b>2.48</b>	<b>16.67</b>	<b>6.71</b>	<b>538,312,224</b>

<sup>1</sup> Based on gross payment for March.

## Subsection 4.—Youth Allowances

Legislation providing for a program of youth allowances became effective Sept. 1, 1964. The Federal Government does not provide youth allowances in Quebec, which has its own program, but that province is compensated by a tax abatement adjusted to equal the amount that the Federal Government would otherwise have paid in allowances to Quebec residents.

Under the federal program, monthly allowances of \$10 are payable in respect of all dependent youths age 16 and 17 who are receiving full-time educational training or are precluded from doing so by reason of physical or mental infirmity. Both the parent or guardian and the youth must normally be physically present and living in a province other than Quebec. The allowance is not payable to a parent who resides in Quebec or outside Canada, regardless of where his child may be attending school. However, a dependent youth may attend school in Quebec or outside Canada, or, if disabled, receive care or training in Quebec or outside Canada and still be considered eligible, on the basis that he is a resident of a province other than Quebec but is temporarily absent.

Allowances normally commence with the month following that in which family allowances cease and continue until the school year terminates. They are paid retroactively for the summer months when the youth returns to school at the commencement of the new school year. Allowances for a disabled child not attending school, however, are payable continuously throughout the year. Should the youth leave school, leave the country permanently, cease to be maintained, take up residence in Quebec, or die, the allowance will cease. Otherwise, the youth allowance continues until the end of the month in which the youth reaches age 18. Youth allowances are considered not to be income for any purpose of the Income Tax Act.

The program is administered by the Department of National Health and Welfare. The National Director of the family allowances and old age security programs also administers youth allowances, assisted by regional directors located in each of the provincial capitals other than Quebec City. The costs of youth allowances are met from the Consolidated Revenue Fund.

### 3.—Youth Allowances Statistics, by Province, Year Ended Mar. 31, 1966 with Totals for 1965 and 1966

Province or Territory	Youths for Whom Allowance Paid in March			Net Total Allowance Paid during Fiscal Year
	Attending School Full-Time	Having Physical or Mental Infirmary	Total Youths	
	No.	No.	No.	\$
Newfoundland.....	14,970	151	15,121	1,591,901
Prince Edward Island.....	3,553	40	3,593	395,465
Nova Scotia.....	22,972	176	23,148	2,691,768
New Brunswick.....	19,868	204	20,072	2,311,244
Ontario.....	189,923	783	190,706	21,978,399
Manitoba.....	27,930	148	28,078	3,249,490
Saskatchewan.....	29,605	94	29,699	3,414,834
Alberta.....	41,877	181	42,058	4,836,771
British Columbia.....	51,556	214	51,770	5,934,292
Yukon Territory.....	258	1	259	30,210
Northwest Territories.....	290	—	290	34,176
<b>Canada.....1966</b>	<b>402,802</b>	<b>1,992</b>	<b>404,794</b>	<b>46,468,550</b>
<b>1965</b>	<b>396,277</b>	<b>1,756</b>	<b>398,033</b>	<b>26,869,815<sup>1</sup></b>

<sup>1</sup> Seven months; program became effective Sept. 1, 1964.

## Section 2.—Federal-Provincial Programs

### Subsection 1.—Canada Assistance Plan

The Canada Assistance Plan, a comprehensive public assistance measure to complement the provisions of the Canada Pension Plan, which received Royal Assent on July 15, 1966 (SC 1966, c. 45), will provide a single administrative framework for federal sharing with the provinces in costs of assistance and of welfare services. It is designed to replace the four existing programs of unemployment assistance, old age assistance, blind persons' allowances and disabled persons' allowances but the provinces will have the option of continuing separate administration of the categorical programs, and the provision for contracting out that now applies to the four programs under the Established Programs (Interim Arrangements) Act will extend to the Canada Assistance Plan.

The Plan authorizes the Federal Government to enter into an agreement with any province to share, on an equal basis, the costs of assistance to persons in need and of improving or extending welfare services. From Apr. 1, 1966, the Plan will cover those costs shared under the Unemployment Assistance Act (see p. 317) and will extend federal sharing to the following costs: assistance to needy mothers with dependent children, maintenance of children in the care of provincially approved child welfare agencies, health care services to needy persons, and extension of welfare services to prevent and remove causes of poverty and to assist persons receiving assistance to achieve the greatest possible degree of self-support. The only eligibility requirement is that of need, irrespective of the cause of need and without reference to employment status. Need is to be determined by a needs test. No residence requirements are specified and a province may not require a period of previous residence in the province as a condition of eligibility for assistance or for continued assistance. No maximum amounts of assistance are set and rates and conditions of aid are set by the provinces. The resulting flexibility will enable the provinces to adjust rates to local conditions and to take into account the needs of special groups by providing a differential in benefits or conditions of eligibility.

The costs of improving or extending welfare services, for the purposes of federal reimbursement, may be calculated either as the amount by which the cost, to the province and the municipalities, of providing welfare services exceeds the cost in the base year ended Mar. 31, 1965, or as the cost, to the province and the municipalities, of employing persons who are engaged wholly or mainly in the performance of welfare service functions and who are employed in positions filled after Mar. 31, 1965. At the option of the province, separate agreements may be entered into providing for the sharing of costs of work activity projects to prepare persons in need for entry or return to employment and for the sharing of costs of extensions of provincial welfare services to Indians on reserves, Crown lands or in unorganized territory. The former agreement would cover 50 p.c. of certain operating and maintenance costs; the latter may provide for a federal contribution in excess of 50 p.c.

### Subsection 2.—Old Age Assistance

The Old Age Assistance Act of 1951, as amended, provides for federal reimbursement to the provinces for assistance to persons age 65 or over who are in need and who have resided in Canada for at least ten years or who, if absent from Canada during this period, have been present in Canada prior to the commencement of the ten-year period for double any period of absence during the ten years. A pensioner is transferred to old age security on reaching the eligible age for it. The federal contribution may not exceed 50 p.c. of \$75 a month or of the assistance paid, whichever is less. The province administers the program and, within the limits of the federal Act, may fix the amount of assistance payable, the maximum income allowed and other conditions of eligibility. Effective Apr. 1, 1965, Quebec withdrew from this federal-provincial program under the Established Programs (Interim Arrangements) Act, which entitles the province to a tax abatement as an equalization payment.

For an unmarried person, total income allowed, including assistance, may not exceed \$1,260 a year. For a married couple it may not exceed \$2,220 a year or, when the spouse is blind within the meaning of the Blind Persons Act, \$2,580 a year. Assistance is not paid to a person receiving an old age security pension or an allowance under the Blind Persons Act, the Disabled Persons Act, or the War Veterans Allowance Act.

Recipients of old age assistance who are in need may receive supplementary aid under general assistance programs in the provinces. In certain circumstances, the Federal Government may share in such aid under the Unemployment Assistance Act (see p. 317).



#### 4.—Old Age Assistance Statistics, by Province, Year Ended Mar. 31, 1966 with Totals for 1964-66

Province	Recipients in Month of March	Average Monthly Assistance	Federal Contribution during Year	Province or Territory	Recipients in Month of March	Average Monthly Assistance	Federal Contribution during Year
	No.	\$	\$		No.	\$	\$
Newfoundland.....	4,080	72.14	2,121,068	Alberta.....	5,453	68.61	2,795,633
Prince Edward Island...	988	70.73	498,378	British Columbia.....	5,478	71.74	2,836,336
Nova Scotia.....	4,423	67.96	2,188,257	Yukon Territory.....	26	75.00	13,553
New Brunswick.....	4,200	69.72	2,161,779	Northwest Territories..	133	73.64	73,722
Quebec.....	1	1	1	<b>Canada.....1966</b>	<b>52,988<sup>2</sup></b>	<b>68.55<sup>2</sup></b>	<b>26,950,510<sup>2</sup></b>
Ontario.....	19,991	67.28	10,006,001	<b>1965</b>	<b>107,354</b>	<b>69.43</b>	<b>64,990,955</b>
Manitoba.....	4,241	69.02	2,188,141	<b>1964</b>	<b>105,241</b>	<b>65.72</b>	<b>39,208,181</b>
Saskatchewan.....	3,975	68.87	2,097,642				

<sup>1</sup> Effective Apr. 1, 1965, assistance ceased to be paid to Quebec (see on p. 315).

<sup>2</sup> Excludes Quebec.

#### Subsection 3.—Allowances for Blind Persons

The Blind Persons Act of 1951, as amended, provides for federal reimbursement to the provinces for allowances to blind persons age 18 or over who are in need. The federal contribution may not exceed 75 p.c. of \$75 a month or of the allowance paid, whichever is less. The province administers the program and, within the limits of the federal Act, may fix the amount of allowance payable and the maximum income allowed. Effective Apr. 1, 1965, Quebec withdrew from this federal-provincial program under the Established Programs (Interim Arrangements) Act, which entitles the province to a tax abatement as an equalization payment.

To qualify for an allowance a person must meet the required definition of blindness and have resided in Canada for ten years immediately preceding commencement of allowance or, if absent from Canada during this period, must have been present in Canada prior to its commencement for a period equal to double any period of absence during the period. For an unmarried person, total income including the allowance may not exceed \$1,500 a year; for a person with no spouse but with one or more dependent children, \$1,980; for a married couple, \$2,580. When the spouse is also blind, income of the couple may not exceed \$2,700. Allowances are not payable to a person receiving assistance under the Old Age Assistance Act, an allowance under the Disabled Persons Act or the War Veterans Allowance Act, a pension under the Old Age Security Act or a pension for blindness under the Pensions Act.

Recipients of blindness allowances who are in need may receive supplementary aid under general assistance programs in the provinces. In certain circumstances, the Federal Government may share in such aid under the Unemployment Assistance Act (see p. 317).

#### 5.—Statistics of Allowances for the Blind, by Province, Year Ended Mar. 31, 1966 with Totals for 1964-66

Province	Recipients in Month of March	Average Monthly Allowance	Federal Contribution during Year	Province or Territory	Recipients in Month of March	Average Monthly Allowance	Federal Contribution during Year
	No.	\$	\$		No.	\$	\$
Newfoundland.....	445	73.27	304,203	Alberta.....	448	72.38	307,676
Prince Edward Island...	72	72.92	47,372	British Columbia.....	532	73.30	358,287
Nova Scotia.....	714	72.72	487,504	Yukon Territory.....	6	75.00	3,994
New Brunswick.....	626	73.35	438,437	Northwest Territories..	44	75.00	32,310
Quebec.....	1	1	1	<b>Canada.....1966</b>	<b>5,437<sup>2</sup></b>	<b>71.05<sup>2</sup></b>	<b>3,632,212<sup>2</sup></b>
Ontario.....	1,820	67.54	1,153,040	<b>1965</b>	<b>8,586</b>	<b>72.10</b>	<b>5,624,702</b>
Manitoba.....	364	72.19	251,385	<b>1964</b>	<b>8,551</b>	<b>68.12</b>	<b>4,989,897</b>
Saskatchewan.....	366	71.74	248,004				

<sup>1</sup> Effective Apr. 1, 1965, assistance ceased to be paid to the Province of Quebec under this program.

<sup>2</sup> Ex-

### Subsection 4.—Allowances for Disabled Persons

The Disabled Persons Act of 1954, as amended, provides for federal reimbursement to the provinces for allowances paid to permanently and totally disabled persons age 18 or over who are in need and who have resided in Canada for at least ten years immediately preceding commencement of allowance or, if absent from Canada during this period, have been present in Canada prior to its commencement for a period equal to double any period of absence during the period. To qualify for an allowance a person must meet the required definition of "permanent and total disability". The federal contribution may not exceed 50 p.c. of \$75 a month or of the allowance paid, whichever is less. The province administers the program and, within the limits of the federal Act, may fix the amount of allowance payable, the maximum income allowed and other conditions of eligibility. Effective Apr. 1, 1965, Quebec withdrew from this federal-provincial program under the Established Programs (Interim Arrangements) Act, which entitles the province to a tax abatement as an equalization payment.

For an unmarried person, total income including the allowance may not exceed \$1,260 a year. For a married couple the limit is \$2,220 a year except that if the spouse is blind within the meaning of the Blind Persons Act, income of the couple may not exceed \$2,580 a year. Allowances are not paid to a person receiving an allowance under the Blind Persons Act or the War Veterans Allowance Act, assistance under the Old Age Assistance Act, a pension under the Old Age Security Act, or a mother's allowance. The allowance is not payable to a patient in a mental institution or a tuberculosis sanatorium. A recipient who is resident in a nursing home, an infirmary, a home for the aged, an institution for the care of incurables, or a private, charitable or public institution is eligible for the allowance only if the major part of the cost of his accommodation is being paid by himself or another individual.

Recipients of disability allowances who are in need may receive supplementary aid under general assistance programs in the province. In certain circumstances the Federal Government may share in such aid under the Unemployment Assistance Act (see below).

### 6.—Statistics of Allowances for Disabled Persons, by Province, Year Ended Mar. 31, 1966 with Totals for 1961-66

Province	Recipients in Month of March	Average Monthly Allow- ance	Federal Contri- bution during Year	Province or Territory	Recipients in Month of March	Average Monthly Allow- ance	Federal Contri- bution during Year
	No.	\$	\$		No.	\$	\$
Newfoundland.....	1,817	74.49	804,197	Alberta.....	1,933	73.18	851,833
Prince Edward Island...	788	74.25	349,881	British Columbia.....	2,385	73.86	1,051,500
Nova Scotia.....	3,474	73.92	1,524,103	Yukon Territory.....	2	75.00	900
New Brunswick.....	2,320	74.34	1,030,637	Northwest Territories...	26	74.47	19,376
Quebec.....	1	1	1				
Ontario.....	18,406	73.10	7,823,576	<b>Canada.....1966</b>	<b>34,588<sup>2</sup></b>	<b>73.51<sup>2</sup></b>	<b>14,979,430<sup>2</sup></b>
Manitoba.....	1,566	73.80	688,650	<b>1965</b>	<b>53,103</b>	<b>73.86</b>	<b>23,365,493</b>
Saskatchewan.....	1,871	74.08	824,777	<b>1961</b>	<b>51,671</b>	<b>69.48</b>	<b>20,206,543</b>

<sup>1</sup> Effective Apr. 1, 1965, assistance ceased to be paid to the Province of Quebec under this program.  
includes Quebec.

<sup>2</sup> Ex-

### Subsection 5.—Unemployment Assistance

Under the Unemployment Assistance Act 1956, as amended, the Federal Government may enter an agreement with any province to reimburse it for 50 p.c. of the unemployment assistance expenditures made by the province and its municipalities to persons and their dependants who are unemployed and in need. All provinces and territories have signed agreements under the Act. The rates and conditions of assistance are determined by the provinces or by their municipalities. Payments to both employable and unemployable persons are sharable under the agreements, as are the costs of maintaining persons in homes

for special care, such as nursing homes or homes for the aged. The Federal Government shares in additional assistance paid to needy persons in receipt of old age security pensions, old age assistance, blind persons' allowances, disabled persons' allowances and unemployment insurance benefits, where the amount of the assistance paid is determined through an assessment of the recipient's basic requirements and of his financial resources. The Act will be replaced by the Canada Assistance Plan (see pp. 314-315).

**7.—Unemployment Assistance, by Province, Year Ended Mar. 31, 1965 with Totals for 1963-65**

Province	Recipients <sup>1</sup> in March	Federal Share of Unem- ployment Assistance Costs <sup>2</sup>	Province or Territory	Recipients <sup>1</sup> in March	Federal Share of Unem- ployment Assistance Costs <sup>2</sup>
	No.	\$		No.	\$
Newfoundland.....	58,931	4,620,079	Alberta.....	60,653	9,707,440
Prince Edward Island.....	2,628	306,525	British Columbia.....	92,192	17,177,860
Nova Scotia.....	26,991	1,875,679	Yukon Territory.....	322	71,509
New Brunswick.....	21,450	1,562,799	Northwest Territories.....	1,179	96,672
Quebec.....	248,334	41,877,054			
Ontario.....	135,347	25,812,190	<b>Canada.....</b>	<b>1965</b>	<b>723,073</b>
Manitoba.....	31,446	5,203,784		<b>1964</b>	<b>733,489</b>
Saskatchewan.....	40,600	4,578,307		<b>1963</b>	<b>754,164</b>
					<b>112,889,898</b>
					<b>106,497,974</b>
					<b>96,184,792</b>

<sup>1</sup> Includes dependants.

<sup>2</sup> Payment figures shown are for the months to which the claims made under the program relate and include amounts paid to the provinces by the Federal Government after the end of the fiscal year.

**Subsection 6.—Fitness and Amateur Sport Program**

The Fitness and Amateur Sport Act of 1961, administered by the Minister of National Health and Welfare, provides up to \$5,000,000 a year to be spent on the encouragement, promotion and development of active leisure pursuits for everyone in Canada. Although the federal, provincial and municipal governments provide the funds and resources, the programs are carried out almost entirely by non-governmental agencies. Under the Act, Canadian participation in active recreation and amateur sport can be promoted internationally, nationally, provincially and locally through financial assistance, technical guidance, the provision of teaching materials, assistance to training, research and the construction of facilities. The National Advisory Council of Fitness and Amateur Sport advises the Minister of National Health and Welfare in fitness and amateur sport matters; its 30 members are chosen for their interest and experience, with at least one member from each province.

The federal program has five elements. *Grants to National Organizations*, totalling more than \$1,000,000 a year, go to some 50 national fitness and sporting organizations to help train coaches, to improve standards of instruction, to increase participation in sports, to aid the holding of national and regional competitions, and to assist Canadian athletic teams at international competitions. *Grants for Athletic Events* of nation-wide interest assist in the holding of such events as the 1967 Pan-American Games in Winnipeg and the 1967 Canadian Winter Games in the Quebec area. *Grants for Training and Research* are made for graduate study in fitness and amateur sport, for research fellowships, and for scholarships and bursaries for undergraduate study in physical education and recreation. The Research Committee of the National Advisory Council, which is composed of leading scientists, reviews applications for aid and makes recommendations on general program policy to the Council. *Services of the Department of National Health and Welfare* include the provision of technical advice, training material and promotional aids. Visual aids for coaching, printed guides on particular sports and recreational activities, and technical information on the construction and use of facilities are provided. Typically Canadian sporting and recreational activities have been featured by "How To" kits that include an illustrated manual, a film to rouse interest in the subject, and films in which techniques are demonstrated; these kits and other films are available from the Department's Fitness Film



Library. Committees of the National Advisory Council meet frequently with the executives of sports organizations to discuss policy and a federal-provincial committee of government officials advises on and co-ordinates governmental aspects of the program. The Department also co-ordinates work done by other federal agencies in fitness and amateur sport. *Grants to the Provinces* of \$1,000,000 a year are made to those that enter into cost-sharing agreements for provincial programs of fitness and amateur sports. The Federal Government meets 60 p.c. of the cost of projects and the full cost of the scholarships and bursaries. Applications for all grants at the provincial or local level are made in the first instance to the responsible provincial department. Most of the ideas for recreational activities and plans originate in the municipal recreation departments where the needs of the individual communities are best known.

### **Subsection 7.—National Welfare Grant Program**

The National Welfare Grant Program was established in 1962 to help develop and strengthen welfare services in Canada through a general welfare and professional training grant and a welfare research grant. For the year ending Mar. 31, 1967, \$2,000,000 was allotted to the program. Provincial governments, municipal welfare departments, non-governmental welfare and correctional agencies, universities and individuals may be the ultimate recipients of grants under one or more provisions of the program. Some are financed and administered entirely by the Federal Government; others require application through a provincial department of welfare that actually makes the award on a cost-sharing basis with the Federal Government.

General welfare, bursary, training and staff development grants are shared provisions. General welfare grants provide funds for projects to improve welfare administration, to develop provincial consultative and co-ordinating services, and to strengthen and extend public and voluntary welfare services in child welfare, aging, general assistance and other welfare fields. Bursaries are provided for full-time graduate training at Canadian schools of social work, and training grants are available for employees of government and voluntary welfare agencies. Staff development grants provide support for a wide variety of staff training programs for personnel employed, or to be employed, in public and non-governmental welfare agencies. The other provisions of the program are administered by the Federal Government. Welfare scholarships are awarded for graduate study in Canadian schools of social work and fellowships for advanced study at Canadian and foreign universities. Teaching and field instruction grants assist Canadian schools of social work with the salaries of additional staff required to implement the program.

Under the welfare research grant, funds are provided for a variety of research studies undertaken by public and voluntary welfare and correctional agencies, universities and research institutions.

The flexibility of the program was increased by policy changes made in 1966. Demonstration grants, to test new and different ways of providing services, previously given on a shared-cost basis, no longer require sharing. Also, national voluntary welfare agencies may now submit directly to the Federal Government projects related to the strengthening and development of welfare services not covered by other provisions of the program.

Total expenditures under the program for the year ended Mar. 31, 1966 amounted to \$1,131,749, distributed as follows: research, \$112,023; bursaries, fellowships and scholarships, \$142,253; training, \$111,250; teaching and field instruction, \$233,287; staff development, \$99,734; and welfare services and demonstration projects, \$433,202.

### **Subsection 8.—Vocational Rehabilitation**

The federal-provincial vocational rehabilitation program, started in 1952, was consolidated and extended under the Vocational Rehabilitation of Disabled Persons Act, 1961. Under federal-provincial agreements to share equally the costs of co-ordination,

assessment and provision of services to disabled individuals, of training personnel and of research, the provinces have developed comprehensive programs in co-operation with existing services. Approved services comprise medical, social and vocational assessment, counselling, restorative services, vocational training and employment placement. A provincial co-ordinator of rehabilitation is responsible for the co-ordination and administration of these services to disabled individuals in each province. In the year ended Mar 31, 1966, the provincial staff employed in vocational rehabilitation totalled 323.

The federal aspects of the program are administered by the National Co-ordinator of Rehabilitation through the Civilian Rehabilitation Branch of the Department of Manpower and Immigration. The Minister of that Department receives the advice of the National Advisory Council on the Rehabilitation of Disabled Persons, composed of representatives of the provinces, employers, labour, the medical profession, national voluntary agencies and the universities. In 1965-66, federal-provincial expenditures under the program (exclusive of vocational training) totalled \$1,714,623. Full reports were received on 2,451 disabled persons rehabilitated during the year; before rehabilitation most of these persons and their dependants relied on private or public assistance for support at an estimated annual cost of \$1,600,000 but following rehabilitation the estimated amount earned by those gainfully employed was \$5,600,000.

The Civilian Rehabilitation Branch, through its Division of Older Workers, also has the function of encouraging a more favourable employment climate for older workers through the development of a long-range educational program, the encouragement of research, the maintenance of liaison with employer and labour organizations and voluntary agencies in Canada and other countries, and the assembly and dissemination of information.

Under the sections of the Technical and Vocational Training Assistance Act of 1961 that provide for equal federal-provincial sharing of the cost of approved programs for the training of disabled persons for gainful employment, there were in 1965-66 approximately 3,900 persons enrolled in various courses; federal payments amounted to \$799,894. Referrals for job placement are made to 386 special services officers in 211 local Manpower and Employment Offices. Placements of handicapped persons in 1965-66 (including those referred from provincial rehabilitation authorities) numbered 23,658.

With the integration of the federal-provincial vocational rehabilitation program into the new Canada Manpower Services,\* vocational rehabilitation services will be increasingly extended to persons with handicaps to employability other than physical and mental impairment.

### Section 3.—Provincial Welfare Programs

Major welfare programs governed by provincial legislation include general assistance and social allowances, mothers' allowances, services for the aged, and child welfare services. Also, the Province of Quebec has established and is operating the Quebec Pension Plan, which is comparable to the Canada Pension Plan; both Plans commenced in January 1966 and are to be closely co-ordinated (see pp. 309-312). In most provinces, responsibility for a number of the programs is shared by the provinces and their municipalities. Provincial administration is carried out through the department of public welfare in each province; several departments have established regional offices to facilitate administration and to provide consultative services to the municipalities.

The provincial departments of public welfare are placing increasing emphasis on standards of administration and on rehabilitative services for social assistance recipients, several provinces having recently introduced legislation under which the province will share with the municipalities the costs of preventive and rehabilitative welfare services. In the field of child welfare, the main efforts are being directed toward improvement of standards with particular emphasis on preventive casework services for children in their own homes, development of specialized children's institutions, group-living homes, and the finding of adoption homes for all children in need of them.

\* See Chapter XVIII on Labour.

Public services are supplemented by those of voluntary agencies whose interests include the welfare of families and children and of groups with special needs, such as the aged, recent immigrants, youth groups, and released prisoners. Welfare councils and social planning councils contribute to the planning and co-ordinating of local welfare services. Local voluntary agencies and institutions may receive public grants, depending on the nature and standard of their services, although, with the exception of the semi-public children's aid societies, their main support is usually from united funds or community chests, or from sponsoring organizations.

### Subsection 1.—General Assistance

All provinces make legislative provision for general assistance on a means or needs test basis to needy persons and their dependants who cannot qualify for other forms of aid, and some provinces include those whose benefits under other programs are not adequate. Where necessary, the aid may be for maintenance in homes for special care. In addition to financial aid for the basic needs of food, clothing, shelter and utilities, some provinces provide incapacitation or rehabilitation allowances, counselling and homemaking services, and post-sanatorium care and some provide allowances to persons with long-term need: persons who are unable to support themselves because of mental or physical disability or because of their age, mothers with dependent children and, in two provinces (Ontario and Quebec), needy widows and unmarried women of 60 years of age or over. This assistance is administered by the province or by the municipalities with substantial financial support from the province, which, in turn, is reimbursed by the Federal Government under the Unemployment Assistance Act for 50 p.c. of the provincial and municipal assistance given (see p. 317).

The provincial departments of public welfare have regulatory and supervisory powers over municipal administration of general assistance and may require certain standards as a condition of provincial aid. Length of residence is not a condition of aid in any province, but the residence of the applicant as defined by statute determines which municipality may be financially responsible for his aid. This rule does not apply in three provinces; British Columbia and Saskatchewan have equalized municipal payments and Quebec does not require its municipalities to contribute to general assistance costs. Provinces with unorganized areas take responsibility for aid in these districts. Under the federal Unemployment Assistance Act, all provinces have agreed that residence shall not be a condition of assistance for applicants who move from one province to another. For persons without provincial residence (usually a period of one year), aid may be given by the province or the municipality and a charge-back may or may not be made to the province or municipality of residence.

The formula for provincial-municipal sharing of costs is determined by the province. A substantial proportion of the costs of aid given to needy persons is borne by the province through assumption of responsibility for aid to certain categories of persons and through reimbursement of municipal expenditures varying by province from 40 p.c. to 100 p.c. In Nova Scotia, New Brunswick and Ontario, the province also reimburses the municipalities for 50 p.c. of the costs of administration. In British Columbia, the province shares with the municipalities expenditures on the salaries for social workers. In Newfoundland all aid is provincially administered. During 1966, a number of provinces introduced legislation extending provincial responsibility for the financing of welfare services.

### Subsection 2.—Mothers' Allowances

All provinces make provision for allowances to needy mothers. A number of provinces include such allowances in a broadened program of provincial allowances to persons in several categories of long-term need or have incorporated this legislation with general



assistance within a single Act, while continuing separate administration. In British Columbia, on the other hand, aid is provided to needy mothers under the general assistance program on the same basis as to other needy persons.

Subject to conditions of eligibility which vary from province to province, mothers' allowances or their equivalents are payable from provincial funds to applicants who are widowed, or whose husbands are mentally incapacitated or are physically disabled and unable to support their families. They are also payable to deserted wives who meet specified conditions; in several provinces to mothers whose husbands are in penal institutions, or who are divorced or legally separated; in some, to unmarried mothers; and in Ontario, Quebec and Nova Scotia to Indian mothers. Foster mothers are eligible under certain circumstances in most provinces.

The age limit for children is 16 years in most provinces, with provision made to extend payment for a specified period if the child is attending school or if he is physically or mentally handicapped. In all provinces applicants must satisfy conditions of need and residence but the amount of outside income and resources allowed and the length of residence required prior to application vary, the most common period being one year. One province has a citizenship requirement.

#### 8.—Mothers' Allowances, by Province, as at Mar. 31, 1965 with Totals for 1963-65

Province	Families Assisted	Children Assisted	Payments during the Year Ended Mar. 31
	No.	No.	\$
Newfoundland.....	5,382	14,538	5,343,344
Prince Edward Island.....	314	760	247,455
Nova Scotia.....	3,436	8,449	2,684,337
New Brunswick.....	2,284	6,282	2,089,325
Quebec.....	15,785	48,076	21,067,715
Ontario <sup>1</sup> .....	12,073	31,273	17,043,696
Manitoba.....	1,975	4,499	3,047,284
Saskatchewan.....	2,461	6,276	3,811,472
Alberta <sup>2</sup> .....	679	1,246	741,105
British Columbia.....	3	3	3
<b>Canada<sup>4</sup>.....</b>			
	<b>1965</b>	<b>121,399</b>	<b>56,075,733</b>
	<b>1964</b>	<b>123,791</b>	<b>55,425,144</b>
	<b>1963</b>	<b>120,229</b>	<b>50,641,496</b>

<sup>1</sup> Includes dependent fathers assisted under the General Welfare Assistance Act.

families with 12,540 children were assisted under Part III of the Public Welfare Act; cost of allowances for this group is not available separately.

<sup>4</sup> Exclusive of British Columbia.

<sup>2</sup> An additional 4,106 families with 12,540 children were assisted under Part III of the Public Welfare Act; cost of allowances for this group is not available separately.

<sup>3</sup> Caseload merged with social assistance; no separate figures available.

#### Subsection 3.—Living Accommodation for Elderly Persons

In all provinces, homes for the aged and infirm are provided under provincial, municipal or voluntary auspices. These homes are required to meet standards set out in provincial legislation relating to homes for the aged, welfare institutions, or public health. Voluntary homes are usually provincially inspected and in some provinces must be licensed.

Most of the provinces make capital grants toward the construction or renovation of homes for the aged by municipalities or voluntary organizations and exempt homes for

the aged from municipal taxation; some guarantee the repayment of loans made for the construction of homes. Most provinces also make provision for capital grants to municipalities, voluntary organizations, or limited-dividend companies for the construction of low-rental housing for the elderly. These projects are usually built under Sect. 16 of the National Housing Act, which provides for long-term low-interest loans to limited-dividend companies constructing low-rental self-contained or hostel accommodation for the elderly. Units for the elderly may also be included in low-rental public housing projects for families built under Sect. 35 of the Act. Three provinces guarantee the repayment of loans made for the construction of low-rental housing, and one province pays an annual maintenance grant for such housing.

In some provinces efforts are made to place well, elderly people in small proprietary boarding homes. Elderly persons who are chronically ill may be cared for in chronic or convalescent hospitals, private or public nursing homes and some homes for the aged. All provinces contribute to the maintenance of needy persons in homes for the aged or other homes for special care, and these costs are shared by the Federal Government under the Unemployment Assistance Act (see p. 317). Under its Elderly Persons Social and Recreational Centres Act, Ontario provides for a provincial grant of up to 30 p.c. of the cost of constructing or acquiring a building for use as a centre if the local municipality contributes 20 p.c. of the cost.

#### **Subsection 4.—Child Welfare Services**

Child welfare services, which include child protection and care, services for unmarried parents and adoption services, are provided in all provinces under provincial legislation. The program may be administered by the provincial authority or the responsibility may be delegated to local children's aid societies (voluntary agencies with boards of directors, operating under charter and under the general supervision of provincial departments). In Newfoundland, Prince Edward Island and Saskatchewan, child welfare services are administered by the province; in Alberta they are mainly administered by the province although in the larger urban centres there is some delegation to the municipality; in Quebec they are administered by recognized voluntary agencies and institutions, religious and secular; in Ontario and New Brunswick, a network of local children's aid societies is responsible for the services; in Nova Scotia, Manitoba and British Columbia, services are administered by local children's aid societies in the heavily populated areas and by the province elsewhere.

Children's aid societies and the recognized agencies in Quebec receive substantial provincial grants and sometimes municipal grants and in many areas they also receive support from private subscriptions or from community chests or united funds. Maintenance costs for children in care of a voluntary or public agency may be borne entirely by the province or partly by the municipality of residence and partly by the province.

The child welfare agencies, provincial or private, have the authority to investigate cases of alleged neglect and, if necessary, to apprehend a child and to bring the case before a judge upon whom rests the responsibility of deciding whether in fact the child is neglected. When neglect is proved, the court may direct that the child be returned to his parent or parents, under supervision, or be made a ward of the province or a children's aid society or, in Quebec, be placed under the authority of a suitable person or agency whose services may involve casework with families in their own homes, care in foster boarding homes or adoption homes, or, for children who need it, in selected institutions. Children placed for adoption may be wards or they may be placed on the written consent of the parent. Adoptions, including those arranged privately, number about 14,000 annually.

Child welfare agencies make use of the small selective institution for placement of children who are forced to be away from their own homes for a short period or who may

need preparation for placement in foster homes, and emphasis is increasingly being placed on group-living homes. The development of small, highly specialized institutions, which function as treatment centres for emotionally disturbed children, is of particular significance. Institutions for children are governed by provincial child welfare legislation and by provincial or municipal public health regulations; they are generally subject to inspection and in some provinces to licensing. Sources of income may include private subscriptions, provincial grants, and maintenance payments on behalf of children in care, payable by the parents, the placing agency or the responsible municipal or provincial department.

Services to unmarried parents include casework services to the mother and possibly to the father, legal assistance in obtaining support for the child from the father, and foster-home care or adoption services for the child. Support for unmarried mothers may be obtained under general assistance programs. In many centres, homes for unmarried mothers are operated under private or religious auspices.

Day nurseries for the children of working mothers are established only in the larger centres and chiefly under voluntary auspices. Licensing is required in five provinces but Ontario is the only province with a Day Nurseries Act.

### **Section 4.—International Welfare\***

Canada's participation in the international welfare activities of the United Nations and its Specialized Agencies and of other international organizations is co-ordinated by the Department of National Health and Welfare.

Canada has been on the Executive Board of the United Nations Children's Fund (UNICEF) since the Fund was created in 1946, except for a three-year period from 1959 to 1961. The Deputy Minister of National Welfare, the Canadian representative on the Executive Board of UNICEF, was elected Chairman of the Board in February 1966 after serving two consecutive terms as Chairman of its Programme Committee. Some 224 UNICEF-assisted projects are at present benefiting the health, education and welfare of needy children in 84 developing countries and territories. Canada is also represented on the Economic and Social Council of the United Nations and on the Governing Body of the International Labour Organization.

Through multilateral and bilateral programs, Canada contributes technical assistance to developing countries in the social as well as in other fields. Academic training and observation tours are arranged for foreign students in Canadian universities and institutions and Canadian welfare experts are sent abroad to help in the social development of less advanced nations. In addition to the activities and contributions by the Canadian Government, Canadian voluntary agencies are active in providing aid to developing countries and participating in international discussions of welfare matters.

## **PART III.—HEALTH AND SOCIAL WELFARE EXPENDITURES**

### **Section 1.—Government Expenditures on Health and Social Welfare**

In the seven years ended Mar. 31, 1959-65, expenditures of all levels of government on health and social welfare rose from \$2,821,000,000 to \$4,466,500,000, an increase of 58 p.c. If these figures are adjusted to take account of the growth in population, the increase in per capita expenditures—from \$164 to \$231—is about 41 p.c. Government expenditures may also be measured in relation to major economic indicators; on this basis, annual

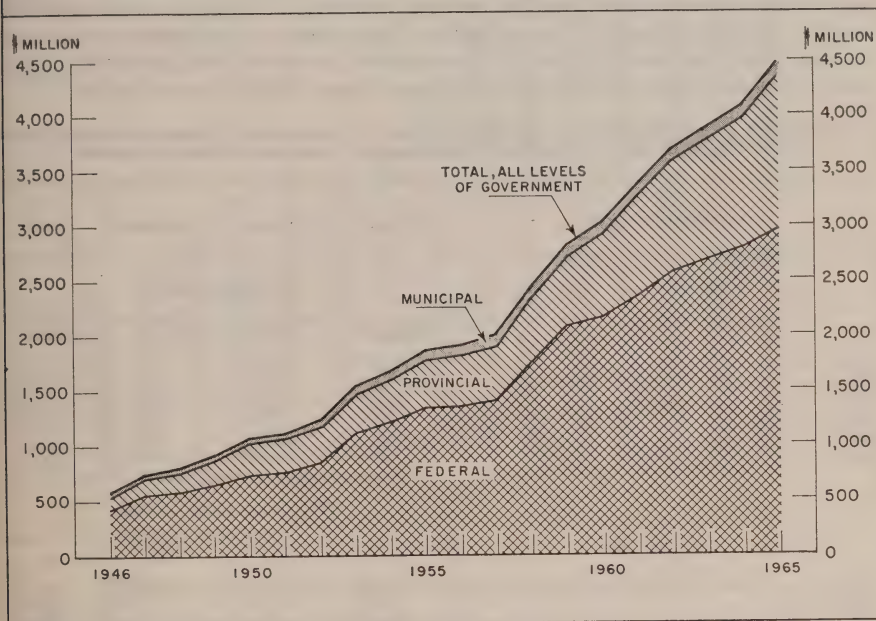
\* See also pp. 171-176.



government expenditures on health and social welfare rose over the 1959-65 period from 11.1 p.c. to 12.5 p.c. of net national income and from 8.4 p.c. to 9.3 p.c. of gross national product. The federal share of health and social welfare expenditures fell from 73.9 p.c. in 1958-59 to 66.4 p.c. in 1964-65, the provincial share rose from 22.2 p.c. to 30.7 p.c. and municipal outlays declined from 3.9 p.c. to 2.9 p.c. Compared with the previous year, 1963-64, health and social welfare expenditures by all levels of government increased by \$379,000,000 or 9 p.c. Although outlays by all governments increased, provincial expenditures showed the greatest gain.

Of considerable interest is the growing proportion of government expenditures on health and social welfare taken up by health programs; in 1958-59 such programs accounted for \$624,000,000 or 22 p.c. and in 1964-65 for \$1,573,000,000 or 35 p.c.

EXPENDITURE ON HEALTH AND SOCIAL WELFARE  
BY ALL LEVELS OF GOVERNMENT, YEARS ENDED MAR. 31, 1946-65



An outline of the principal components for 1964-65 shows the magnitude of the major programs and services—family allowances payments amounted to \$546,000,000, old age security payments to \$885,000,000, unemployment insurance benefits to \$335,000,000, veterans' pensions and allowances to \$180,000,000 and \$93,000,000, respectively, and payments from the Prairie Farm Emergency Fund to \$11,000,000. These income-maintenance programs were entirely the responsibility of the Federal Government. In addition, payments under the youth allowances program, which commenced in September 1964, amounted to \$27,000,000. The Province of Quebec had instituted a program of schooling allowances three years prior to the introduction of the federal program. This necessitated a special arrangement with Quebec whereby that province continued its program, but with appropriate fiscal arrangements with the Federal Government.

Federal-provincial income-maintenance programs required expenditures of \$90,000,000 for old age assistance, \$7,500,000 for blindness allowances, nearly \$47,000,000 for disabled persons allowances and \$215,000,000 for unemployment assistance, the latter including some municipal expenditure. Effective Apr. 1, 1965, Quebec withdrew from these federal-provincial programs under the Established Programs (Interim Arrangements) Act which entitles that province to a tax abatement as an equalization payment. Workmen's Compensation Boards spent \$120,000,000 on cash benefits for pensions and compensation. Welfare services for Indians and for veterans and the national employment service accounted for \$50,000,000 at the federal level and child welfare services required an expenditure of approximately \$60,000,000 by provincial governments.

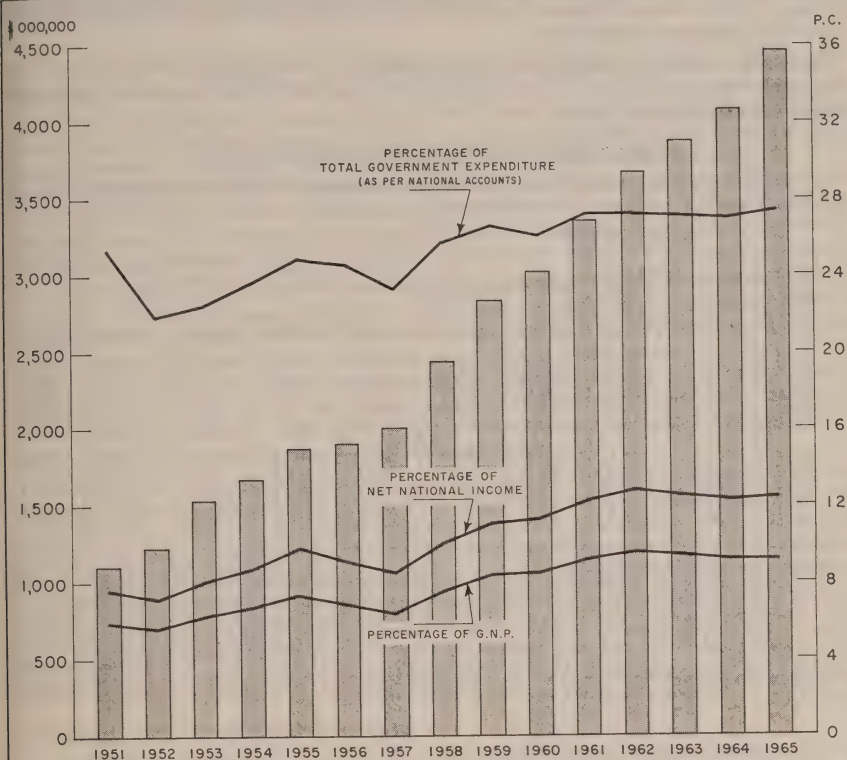
In the field of health, federal grants to the provinces under the Hospital Insurance and Diagnostic Services Act totalled almost \$434,000,000 and grants for hospital construction and general health grants to the provinces and municipalities amounted to \$57,000,000. The Federal Government spent \$31,000,000 on its Indian and northern health services and \$47,000,000 on hospital and treatment services for veterans. Provincial expenditures on hospital care are estimated to have totalled \$740,000,000, and \$100,000,000 was spent on other health services. Workmen's Compensation Boards paid \$54,000,000 for medical aid and hospitalization, and municipal governments spent \$81,000,000 on health.

**1.—Total, per Capita and Percentage Distribution of Government Expenditures on Health and Social Welfare, by Level of Government, Years Ended Mar. 31, 1959-65**

Year Ended Mar. 31—	Federal	Provincial	Municipal	Total
TOTAL EXPENDITURES				
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1959.....	2,084.7	627.4	109.3	2,821.3
1960.....	2,162.2	754.7	105.4	3,023.3
1961.....	2,359.9	885.7	109.0	3,354.6
1962.....	2,575.8	998.1	107.8	3,681.8
1963.....	2,682.3	1,082.7	117.3	3,882.2
1964.....	2,799.7	1,164.4	123.0	4,087.1
1965 <sup>1</sup> .....	2,967.7	1,369.8	129.0	4,466.5
PER CAPITA EXPENDITURES				
	\$	\$	\$	\$
1959.....	121.53	36.57	6.37	164.47
1960.....	123.20	43.00	6.06	172.27
1961.....	131.28	49.27	6.06	186.62
1962.....	140.32	54.37	5.87	200.57
1963.....	143.57	57.95	6.28	207.79
1964.....	147.26	61.25	6.47	214.98
1965 <sup>1</sup> .....	153.28	70.75	6.66	230.69
PERCENTAGE DISTRIBUTION				
1959.....	73.9	22.2	3.9	100.0
1960.....	71.5	25.0	3.5	100.0
1961.....	70.4	26.4	3.2	100.0
1962.....	70.0	27.1	2.9	100.0
1963.....	69.1	27.9	3.0	100.0
1964.....	68.5	28.5	3.0	100.0
1965 <sup>1</sup> .....	66.4	30.7	2.9	100.0

<sup>1</sup> Estimated.

EXPENDITURE ON HEALTH AND SOCIAL WELFARE BY ALL LEVELS OF GOVERNMENT WITH PERCENTAGES OF TOTAL GOVERNMENT EXPENDITURE, NET NATIONAL INCOME AND GROSS NATIONAL PRODUCT, YEARS ENDED MAR. 31, 1951-65



## Section 2.—Expenditures on Personal Health Care

Expenditures made on personal health care services, for the purposes of this Section, include the amounts spent by hospitals and the amounts received by physicians, dentists, pharmacists for prescription services, and by other paramedical professionals in the provision of health care and treatment directly to individuals. No attempt is made to include expenditures on public health, or public or private capital expenditures such as the building or extension of hospitals or other health facilities. Also excluded are the cost of administration of public health programs and other technical services as well as the cost of administering voluntary profit or non-profit health insurance plans. On the other hand, expenditures by the three levels of government on behalf of individuals are included.

Canadians spent an estimated \$2,194,000,000 in 1964 on personal health care, which is two and a half times the \$870,000,000 they spent in 1955. The annual rates of increase varied from 8.0 p.c. in 1962 to 13.6 p.c. in 1956, their average being 10.8 p.c. The per



capita expenditure, which was \$55.40 in 1955, rose to \$105.73 in 1963 and an estimated \$114.04 in 1964. The population increase during the period was 22.5 p.c.

The proportion of the gross national product represented by expenditures on personal health care was 3.2 p.c. in 1955 and 4.7 p.c. in 1964. Thus, one in every \$21 of production in Canada in 1964 was for personal health care goods and services as compared with one in every \$31 nine years previously.

Payments received by physicians and surgeons for providing personal medical care services comprise about 23 p.c. of total expenditures on personal health care, and amounted to almost \$494,000,000 in 1964.

## 2.—Expenditures on Personal Health Care, 1955-64

NOTE.—Figures exclude expenditures on public health and expenditures for capital purposes.

Year	Hospital Services					Physicians' Services	Pre-scribed Drugs <sup>4,5</sup>	Dentists' Services	Other <sup>5,6</sup>	Total
	Active Treatment <sup>1</sup>	Mental <sup>2</sup>	Tuberculosis <sup>2</sup>	Federal <sup>3</sup>	All Hospitals					
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1955..	342.4	68.9	29.9	38.8	480.0	206.5	59.5	68.6	55.0	869.6
1956..	380.8	77.6	30.6	40.8	529.8	240.1	71.8	81.5	65.0	988.2
1957..	422.9	87.5	31.0	45.3	586.7	271.0	84.5	87.3	70.0	1,099.5
1958..	462.3	99.0	30.4	48.4	640.1	300.5	90.3	98.1	85.0	1,214.0
1959..	542.6	111.6	29.6	50.3	734.1	324.7	106.5	100.1	95.0	1,360.4
1960..	625.2	120.2	30.1	53.9	829.4	353.9	107.3	112.4	105.0	1,508.0
1961..	714.8	132.8	29.9	56.8	934.3	387.1	111.4	118.8	115.0	1,666.6
1962..	802.4	141.7	29.5	60.1	1,032.7	404.6	113.1	123.8	125.0	1,800.2
1963..	899.7	158.9	28.4	62.9	1,149.9	451.7	126.5	134.8	135.0	1,997.9
1964 <sup>5</sup>	993.7	180.0	27.0	65.9	1,266.6	493.9	136.0	152.0 <sup>7</sup>	145.0	2,193.5

<sup>1</sup> Includes gross expenditures of public and private acute, chronic and convalescent hospitals in 1955-57 and, in non-participating provinces, in 1958-60; includes gross expenditures of budget review and contract hospitals in 1961-64 and, in participating provinces, in 1958-60; excludes expenditures of mental, tuberculosis and federal hospitals.

<sup>2</sup> Includes gross expenditures of public and private hospitals; excludes expenditures of federal hospitals.

<sup>3</sup> Includes acute, chronic, convalescent, mental and tuberculosis hospitals of the Department of National Health and Welfare and the Department of Veterans Affairs; excludes hospitals of the Department of National Defence.

<sup>4</sup> Sold by retail drugstores only.

<sup>5</sup> Estimated.

<sup>6</sup> Includes estimated expenditures for services of private duty nurses, chiropractors, osteopaths and optometrists; excludes all employees of hospitals.

<sup>7</sup> Estimate calculated on a new basis and not necessarily comparable with figures for earlier years.

## PART IV.—NATIONAL VOLUNTARY HEALTH AND WELFARE ACTIVITIES

A number of national voluntary agencies carry on important work in the provision of health and welfare services, planning research and education, supplementing the services of the federal and provincial authorities in many fields and playing a leading role in stimulating public awareness of health and welfare needs and in promoting action to meet them. The functions of twenty important voluntary agencies are described in the 1962 Year Book at pp. 270-274.

**Voluntary Medical Insurance.**—About 11,700,000 Canadians, or 61 p.c. of the population of Canada, had voluntarily secured some protection against the costs of physicians' services at the end of 1964. This protection was provided by 62 non-profit plans with an enrolment of 6,450,000, and 79 private companies giving coverage to an estimated 5,260,000 persons. The total was 5,800,000 above the 1955 figure, which represented only 40 p.c. of the population.

The non-profit plans took in about \$186,000,000 in premiums and \$4,200,000 in other revenue in 1964, paid out \$173,000,000 in benefits and \$13,400,000 for administration, and were left with a surplus of approximately \$3,800,000. Thus, for every dollar

of premiums, 93 cents were paid out in benefits, which amounted to approximately \$26.98 per person covered. In 1955, benefit payments had been \$41,400,000, representing 89 cents of the premium dollar and amounting to only \$13.17 per person.

Profit-making private companies wrote \$119,700,000 of premiums for health protection in 1964; they paid out \$92,000,000 in claims.

## PART V.—VETERANS SERVICES\*

The Department of Veterans Affairs administers most of the legislation known collectively as the Veterans Charter and also provides administrative facilities for the Canadian Pension Commission, which administers the Pension Act and Parts I to X of the Civilian War Pensions and Allowances Act; for the War Veterans Allowance Board, which administers the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act; and for the Secretary General (Canada) of the Commonwealth War Graves Commission.

The principal benefits now available to veterans are medical treatment for those eligible to receive it, land settlement and home construction assistance, educational assistance for the children of the war dead, veterans insurance, general welfare services, unused re-establishment credit, disability and widows pensions and war veterans allowances. The work of the Department, except the administration of the Veterans' Land Act, is carried out through 17 district offices and five sub-district offices in Canada and one district office in England; the benefits of the Veterans' Land Act are administered through seven district offices and 25 regional offices across Canada.

As part of the Department's continuing policy to cherish the memory of Canada's war dead, ceremonies were held in France in June-July 1966, commemorating the fiftieth anniversary of Canadian participation in the Battles of the Somme 1916, and honouring the dead of these and other battles. June 11-17 in Centennial Year will be Veterans Week, during which the Government and veterans organizations across Canada will conduct activities to feature the contributions, achievements and sacrifices of the Canadian citizen-in-arms.

## Section 1.—Pensions and Allowances

### Disability and Dependants Pensions

**Canadian Pension Commission.**—The Canadian Pension Commission administers the Pension Act (RSC 1952, c. 207, as amended) and Parts I to X of the Civilian War Pensions and Allowances Act (RSC 1952, c. 51, as amended). Its members are appointed by the Governor in Council and it reports to Parliament through the Minister of Veterans Affairs. The Commission has district offices in principal cities across Canada with a Senior Pension Medical Examiner in charge and also is represented by a Senior Pension Medical Examiner in London, England, located in the district office of the Department of Veterans Affairs in that city. (See also p. 131.)

**The Pension Act.**—Previous issues of the Year Book contain information on the development of Canadian pension legislation together with yearly statistics of numbers and liabilities.

The Pension Act makes provision for the payment of pensions in respect of disability or death resulting from injury or disease incurred during or attributable to service with the Canadian Navy, Army or Air Force in time of war or peace. Provision is also made for supplementing, up to Canadian rates, awards of pension to or in respect of Canadians for disability or death suffered as a result of service in the British or Allied Forces during World War I or World War II, or payment of pension at Canadian rates in cases where

\* Prepared by the Department of Veterans Affairs, Ottawa.

the claim has been rejected by the government of the country concerned. The annual rates for a 100-p.c. disability for all ranks up to and including that of Colonel and equivalent rank are:—

Pensioner.....	\$ 2,400
Wife.....	768
One child.....	360
Two children.....	624
Each additional child.....	216

For assessments lower than 100 p.c., the awards are proportionately less. The rate of personal pension is higher if the pensioner held a rank higher than Colonel or equivalent rank at the time the disability was incurred, but the additional pension for wives and children remains the same for all ranks. Attendance allowance, which is payable to a pensioner who is totally disabled, helpless and in need of attendance, and which varies from a minimum of \$480 to a maximum of \$3,000 a year depending on the degree of attendance required, is paid in addition to pension. Although a pensioner must be totally disabled to receive this allowance, the disability resulting in the need of attendance may be non-pensionable.

The annual rates of pension for widows and children of all ranks up to and including that of Colonel and equivalent rank are:—

Widow.....	\$ 1,824
One child.....	720
Two children.....	1,248
Each additional child.....	432

Rates for widows are higher if the deceased veteran held a rank higher than that of Colonel or equivalent rank, but those for children remain the same for all ranks.

The Civilian War Pensions and Allowances Act, Parts I to X, provides for the payment of pensions to or on behalf of persons who served in certain civilian groups that were closely associated with the war effort during World War II and who suffered injury or death as a result of such service; these include merchant seamen, saltwater fishermen, auxiliary services personnel, ferry pilots of the RAF Transport Command, firefighters who served in Britain, etc.

#### 1.—Pensions in Force under the Pension Act, as at Dec. 31, 1965

Service	Disability		Dependant		Disability and Dependant	
	Pensions in Force	Liability	Pensions in Force	Liability	Pensions in Force	Liability
	No.	\$	No.	\$	No.	\$
World War I.....	34,495	35,563,007	14,114	24,893,860	48,609	60,456,867
World War II.....	106,396	93,692,522	15,934	24,196,215	122,330	117,888,737
Peacetime.....	2,070	1,443,336	602	1,219,485	2,672	2,662,821
Special Force.....	1,829	1,408,838	184	293,542	2,013	1,702,380
<b>Totals.....</b>	<b>144,790</b>	<b>132,107,703</b>	<b>30,834</b>	<b>50,603,102</b>	<b>175,624</b>	<b>182,710,805</b>

#### War Veterans Allowances and Civilian War Allowances

**War Veterans Allowance Board.**—The War Veterans Allowance Board is a quasi-judicial body consisting, at present, of nine members appointed by the Governor in Council. The Board administers the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act and reports to Parliament through the Minister of Veterans



Affairs. The Board acts as an appeal court for an applicant or recipient aggrieved by a decision of a District Authority and may, on its own motion, review and alter or reverse any adjudication of a District Authority. The Board is also responsible for instructing and guiding the District Authorities in the interpretation of policy and for advising the Minister with respect to Regulations concerning the administration of the Act.

**War Veterans Allowance District Authorities.**—In 1950, 18 District Authorities were established in the regional districts of the Department of Veterans Affairs and granted full power to adjudicate on all matters arising under the War Veterans Allowance Act. In 1960, a separate Authority, the Foreign Countries District Authority, located in Ottawa, was established to look after recipients living outside Canada. The members of a District Authority are employees of the Department of Veterans Affairs appointed by the Minister with the approval of the Governor in Council.

**War Veterans Allowances.**—The purpose of the War Veterans Allowance Act, 1930 is to provide an allowance to otherwise qualified war veterans who, because of age or infirmity, are no longer able to derive their maintenance from employment and to ensure that their income does not fall below the scale specified in the Schedule to the Act. Widows and orphans of recipients of the allowance are eligible for benefits. Since its inception the Act has been amended on 13 different occasions to meet additional needs of veterans and their dependants. The most recent amendments, passed in 1965, incorporated into the Act the increased monthly rates and annual ceilings authorized under the Appropriation Act effective Sept. 1, 1964, and granted service eligibility to allied veterans who served overseas in the Imperial or Allied Forces during World War I, in Britain only, provided they were domiciled in Canada at the time of joining such forces. This is the same service eligibility now enjoyed by former members of His Majesty's Canadian Forces. The amendments allowed for further exemptions in property and income and provided for administrative improvements. Veterans of the Canadian, Commonwealth and Allied Forces may obtain the benefits provided under the Act if their war service, age or incapacity, residence and financial circumstances meet the prescribed requirements. An otherwise qualified applicant or recipient is allowed to own personal property not exceeding \$1,250 if single, and \$2,500 if married and may also have an interest of up to \$10,000 in his residence. The present monthly rates and the maximum total annual income ceilings are:—

<u>Item</u>	<u>Monthly Rate</u>	<u>Annual Income Ceiling<sup>1</sup></u>
	\$	\$
Single.....	94	1,596
Married.....	161	2,664
One orphan.....	60	1,008
Two orphans.....	105	1,608
Three or more orphans.....	141	2,016

<sup>1</sup> Where a recipient or spouse is blind, the income ceiling is \$120 higher.

At Apr. 30, 1966, there were 85,672 recipients of War Veterans Allowances, made up of 55,771 veterans, 29,585 widows and 316 orphans; 665 of the total resided outside Canada. The annual liability for all recipients was \$95,587,683.

**Civilian War Pensions and Allowances.**—Part XI of the Civilian War Pensions and Allowances Act makes available to certain groups of civilians, their widows and orphans, benefits similar to those available to veterans under the War Veterans Allowance Act. These groups, which performed meritorious service in World War I or World War II, are: Canadian merchant seamen of both Wars; non-Canadians who served in Canadian merchant ships in either War; Canadian voluntary aid detachments of World War I; Canadian

firefighters of World War II; Canadian welfare workers of World War II; Canadian transatlantic aircrew of World War II; and Newfoundland Overseas Forestry Unit of World War II.

Service for at least six months at sea or overseas in the group concerned is the prime requisite for eligibility as to service. VADs in World War I are required to have served on the Continent of Europe or for at least 365 days in Britain prior to the Armistice. A pensioner under Parts I to X of the Act is also eligible. The monthly rates and the maximum total annual income ceilings are identical to those in the War Veterans Allowance Act. At Apr. 30, 1966, there were 1,076 civilians, 247 widows and 10 orphans in receipt of Civilian War Allowances, a total of 1,333 recipients of whom five were residing outside Canada. The 1965-66 liability for all recipients was \$1,799,960.

### **Veterans' Bureau**

The Veterans' Bureau, which is a branch of the Department of Veterans Affairs, assists former members of the Armed Forces and their dependants and former members of the various auxiliary organizations in preparing and presenting claims to the Canadian Pension Commission; it has been in operation for 35 years. The Chief Pensions Advocate, who heads the Bureau at Ottawa, is assisted by pensions advocates, most of whom are lawyers located in the departmental district offices. The pensions advocates appear as counsel for applicants before Appeal Boards of the Commission and, in addition, advise pensioners and applicants upon any provision of the Pension Act or phase of pension law or administration that may have a bearing on pension claims. No charge is made for the services of the Bureau.

During 1965, the Veterans' Bureau submitted 6,795 claims to the Canadian Pension Commission for adjudication, of which 36 p.c. were wholly or partially granted. These included 1,218 claims presented to Appeal Boards of the Commission. During the year, 1,365 straight entitlement claims were submitted to the Commission, based on service in World War I and peacetime, of which 203 were wholly or partially granted; claims based on service in World War II and Korea numbered 3,183, of which 1,083 were wholly or partially granted; and of the 1,029 miscellaneous claims submitted, 610 were wholly or partially granted.

## **Section 2.—Welfare Services**

Welfare services for veterans and, where appropriate, their dependants are provided by the Welfare Services Branch. These include the administration of assigned statutes; the conducting of field work and reporting for other branches of the Department, the Canadian Pension Commission, the War Veterans Allowance Board and Services Benevolent Funds; and the provision of a rehabilitation and welfare program of advice and counselling including referral, where indicated, to other public or private agencies, veterans organizations, etc.

**War Service Grants.**—War service gratuities payable under the War Service Grants Act to veterans of World War II and the operations to restore peace in Korea are now payable only in cases where delayed application is acceptable. Re-establishment credit payable under the same Act is available up to Oct. 31, 1968. Payment of the credit, except for a balance of \$50 or less, is not made in cash to the veteran but is released on his behalf for specified purposes. Up to the end of 1965 a total of \$315,220,832 had been paid out and unused balances amounted to \$8,637,352. During 1965 the total paid out amounted to \$241,732 made up of \$127,021 for purchases of homes and for repairs and furniture; \$20,735 for purchases of businesses, tools and equipment; and \$93,976 for miscellaneous items such as insurance, special equipment for training, clothing, etc.

**Assistance Fund.**—Recipients of benefits under the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act living in Canada may be given help from the Assistance Fund if their total income is lower than a stated maximum. Assistance may take the form of a monthly supplement based on shelter, fuel, food, clothing, personal care and specified health costs or of a single award to meet an unusual or emergency need. The number of persons assisted during 1965 was 21,050, the number in receipt of monthly supplements at the end of the year was 15,736 and the Fund expenditures for the year amounted to \$5,489,826; comparable figures for 1964 were 20,513, 15,519 and \$3,758,105, respectively.

**Education Assistance to Children.**—The Children of War Dead (Education Assistance) Act provides help in the form of allowances and the payment of fees for the post-secondary education of children of those whose deaths have been attributed to military service. Assistance is restricted to children attending, in Canada, educational institutions which require secondary school graduation, matriculation or equivalent standing for admission. These include, in addition to universities and colleges, such facilities as hospital schools of teaching and institutes of technology. From its inception in July 1953 to the end of 1965, expenditures totalled \$5,391,428, of which \$2,779,047 was spent in allowances and \$2,612,381 in fees. By the end of 1965, 3,793 children of Canada's war dead had been approved for training. Of these, 1,429 had successfully completed training—194 had obtained degrees in arts and science, 244 in education, 102 in engineering and applied science, 29 in social work, 21 in medicine, 21 in law, 99 in other university faculties, 367 in nursing, 204 in teaching and 148 in administrative and technological fields. At the same date there were 647 university undergraduates and 233 students in non-university courses receiving assistance.

**Veterans Insurance.**—The Returned Soldiers Insurance Act (SC 1920, c. 54 as amended) provides eligibility to contract for life insurance with the Federal Government up to a maximum of \$5,000 to any one veteran of World War I. No policies were issued after Aug. 31, 1933. There were 48,319 policies issued during the eight years in which the Act was open amounting to \$109,299,500 and, of these, there were 6,631 in force with a value of \$14,245,209 on Dec. 31, 1965.

The Veterans Insurance Act (RSC 1952, c. 279 as amended) enables veterans following their discharge and widows of those who died during service to contract with the Federal Government for a maximum of \$10,000 life insurance. Veterans with active service in Korea were extended eligibility by virtue of the Veterans Benefit Act 1954. The period of eligibility to apply for this insurance will cease Oct. 31, 1968. To Dec. 31, 1965, 53,287 policies in the amount of \$173,722,000 had been issued and, of these, 28,299 policies with a value of \$90,054,148 were in force.

**Rehabilitation and Welfare.**—Welfare officers at Departmental District Offices work closely with other branches of the Department, with other public agencies at all levels and with private agencies and organizations in assisting veterans and their dependants to deal with problems of social adjustment, particularly those associated with physical disabilities or the disabilities of increasing age. The latter occur more frequently, of course, as the age of the veteran population increases. Vocational rehabilitation is promoted through training assistance available to disability pensioners and through close collaboration with the federal Department of Manpower and Immigration and provincial rehabilitation and re-training facilities. Sheltered workshops operated at Toronto and Montreal and home assembly work in other centres produce poppies and memorial wreaths and crosses associated with Remembrance Day observances. Finished products are sold to the Dominion Command of the Royal Canadian Legion.



### Section 3.—Treatment Services

**Treatment Activity.**—The Treatment Services Branch of the Department of Veterans Affairs provides medical, dental and prosthetic services for entitled veterans throughout Canada as authorized by the Veterans Treatment Regulations. Service is also provided for members of the Armed Forces, the Royal Canadian Mounted Police, and the wards of other governments or departments at the request and expense of the authorities concerned.

It is the responsibility of the Branch to provide examination and treatment to disabled pensioners for their pensionable disabilities, and to provide treatment to war veterans allowance recipients (but not their dependants), veterans whose service and need make them eligible for domiciliary care, and veterans whose service and financial circumstances render them eligible for free treatment or at a cost adjusted to their ability to pay. If a bed is available, any veteran may receive treatment in a Departmental hospital on a guarantee of payment of the cost of hospitalization. The pensioner receives treatment for his pensionable disabilities regardless of his place of residence but service to other veterans is available in Canada only. Where Departmental facilities are not readily accessible, an eligible veteran may obtain treatment at the expense of the Department in an outside hospital from a doctor of his choice.

Under the federal-provincial hospital insurance program, DVA hospitals are recognized for the provision of insured services to veterans. Any necessary premiums are paid on behalf of veterans in receipt of war veterans allowance. The Veterans Treatment Regulations remain the authority for the treatment of veterans (and others) in DVA institutions and elsewhere under Departmental responsibility, regardless of whether or not the hospitalization is at the expense of the insurance plan.

**Hospital Facilities.**—Treatment is provided in 11 active-treatment hospitals located at Halifax, N.S.; Saint John, N.B.; Quebec City, Montreal and Ste. Anne de Bellevue, Que.; Toronto and London, Ont.; Winnipeg, Man.; Calgary, Alta.; and Vancouver and Victoria, B.C.; and also in a health and occupational centre at Ottawa, Ont., and in two domiciliary care homes at Saskatoon, Sask., and Edmonton, Alta. The rated bed capacity of these institutions at Dec. 31, 1965 was 8,823 beds. It should also be noted that in Ottawa both acute and chronic cases that require definitive treatment are admitted to the National Defence Medical Centre. An additional 571 beds are available in veterans pavilions situated at St. John's, Nfld., Regina, Sask., and Edmonton, Alta. Pavilions are owned by the Department but are operated by the parent hospital, and medical staffs are provided by the Department.

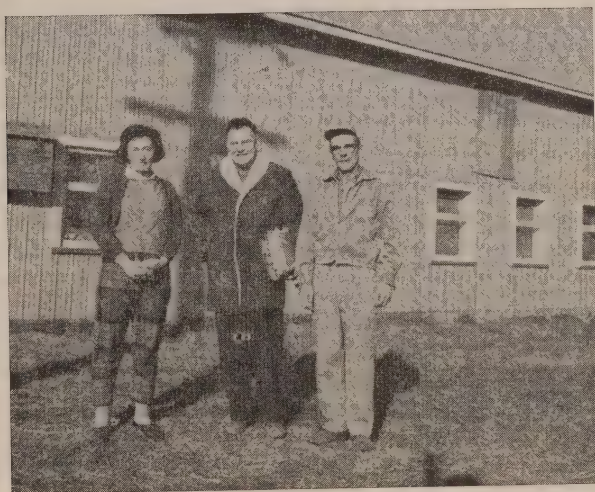
**Medical Staff and Training Programs.**—Many of the professional staffs of Departmental active-treatment hospitals are employed on a part-time basis; in the main they are recommended for appointment by the Deans of Medicine of the universities with which the hospitals are affiliated. Most members of the medical staffs are engaged in teaching and private practice and hold appointments on the medical faculties of the various universities. In the active-treatment institutions, medical teaching programs are maintained, which are considered essential to attract highly qualified professional men and thus ensure the highest quality of medical care. All active-treatment hospitals have been approved by the Royal College of Physicians and Surgeons of Canada for postgraduate teaching in medicine and surgery, and the majority are also approved for advanced postgraduate training in various other specialties. An extensive intern-resident program is in effect in the medical specialties as well as in other fields such as physiotherapy, occupational therapy, dietary, psychology and medical social services. A school for the training of nursing assistants, operated at Camp Hill Hospital in Halifax, has an annual capacity of 70 and graduates are offered employment in other Departmental hospitals. A program of postgraduate and continuing education in pharmacy is conducted, in conjunction with the School of Pharmacy of the University of Toronto, at Westminster Hospital, London, Ont.

**Medical Research.**—During 1965, there were 92 projects in progress under the clinical research program. This program is varied but in the main deals with conditions affecting aging, which the Department is in a special position to investigate. Self-contained clinical investigation units have been set up in active-treatment hospitals located at Montreal, Toronto, London, Winnipeg and Vancouver.

### Section 4.—Land Settlement and House Construction

The Veterans' Land Act, enacted in 1942 and broadened extensively in scope and financial provisions since then, provides financial, technical and supervisory assistance to World War II and Korean Force veterans to enable them to engage in agriculture on a full-time or part-time basis; to acquire and operate commercial fishing establishments; to acquire, build or improve homes; and to settle on provincial, federal and Indian reserve lands. The Act was last amended in June 1965. Provision was made for substantially higher ceilings in the various categories of loans—from \$20,000 to \$40,000 for full-time farmers on economic farm units, from \$12,000 to \$18,000 for small family farmers, from \$10,800 to \$16,000 for small holders (part-time farmers) and from \$12,000 to \$18,000 for veterans building houses. These amendments make the financial assistance available under the Act comparable to that available to non-veterans under the Farm Credit Act and the National Housing Act. Other amendments provide for the financing of secondary enterprises—farm equipment repair shops, tourist facilities, etc.—for the small family farmers; the payment of related debts “reasonably incurred”; the embodiment of the balance of previous loans in new farm loans; and the authority for the Director to assist veterans in the initial financing of an establishment by the repayment of re-establishment credit or rehabilitation grants.

Since inception and up to Dec. 31, 1965, 101,297 veterans have been settled under the provisions of the Act. Of this total, 30,463 were established as full-time farmers, 58,091 as small holders, 5,559 as Crown land settlers, 1,313 as commercial fishermen; 1,674 Indian veterans were established on reservations and 4,197 veterans had homes built on city-size lots. Subsequent to settlement, 11,836 farmers and 6,438 small holders and commercial fishermen were provided with additional financial assistance. In 1965, over \$37,000,000 was approved on behalf of 5,373 veterans. From the commencement of opera-



Financial, technical and supervisory assistance, provided under the Veterans' Land Act, has enabled more than 30,000 veterans to become successful full-time farmers.



tions to the end of 1965, over \$690,000,000 was spent on repayable loans, advances and non-repayable grants. As at Dec. 31, 1965, more than 53,000 veterans had earned conditional grants in excess of \$97,000,000. Since inception and up to the end of 1965, 30,651 veterans had titles to property released to them—11,385 farmers, 13,190 small holders, 414 commercial fishermen, 4,252 Crown land settlers and 1,410 Indian veterans residing on reservations.

Advisory, supervisory and appraisal field services are provided by a staff of farm credit advisers, settlement officers, field officers and construction supervisors, who are highly trained in the techniques pertaining to agriculture, construction and land appraisal. During 1965, 4,174 properties were appraised—1,262 farms, 2,852 small holding and commercial fishing establishments and 60 bare land appraisals. In addition, 1,046 new houses were started—968 small holdings and 78 on city-size lots—and 1,011 new houses were completed. Six construction schools were organized which were attended by 187 veterans.

Continued interest is shown in the Veterans' Land Act group life insurance. By Dec. 31, 1965, 7,130 veterans were covered by insurance to an amount in excess of \$51,000,000. Since the group plan was first introduced, 23 insured veterans have died and \$130,000 has been paid to retire their indebtedness; the total paid in premiums to the end of 1965 was \$432,950.

Veterans continue to maintain a favourable record of repayment. Instalments falling due in 1965 amounted to over \$18,000,000, excluding share-of-crop payments. During the year, almost 97 p.c. of the total amount due was collected and the 1,240 veterans under share-of-crop agreements paid over \$1,400,000.

## 2.—Summary of Operations under the Veterans' Land Act, as at Dec. 31, 1965

Item	Full-Time Farming	Small Holding	Commercial Fishing	Provincial Lands	Federal Lands	Indian Reserves	City-Size Lots	Total
Settlements made..... No.	30,463	58,091	1,313	5,005	554	1,674	4,197	101,297
Additional loans made..... "	11,836	6,438	48	—	—	—	—	18,322
Total loans made..... "	42,299	64,529	1,361	5,005	554	1,674	4,197	119,619
Public funds spent..... \$'000	240,105	391,666	6,322	11,009	1,200	3,741	37,641	691,684
Conditional grants earned..... No.	21,931	25,133	798	3,970	282	1,410	—	53,524
..... \$'000	45,620	37,446	1,452	9,048	660	3,095	—	97,321
Titles released to veterans... No.	11,385	13,190	414	3,970	282	1,410	—	30,651
Accounts under administration "	14,010	33,807	708	336	143	—	103	50,679 <sup>1</sup>
Houses built..... "	2,408	25,691	315	1,460	131	—	4,124	34,129
Houses under construction.... "	86	701	6	13	—	—	73	879

<sup>1</sup> Includes 1,572 civilian purchaser accounts.

## Section 5.—Commonwealth War Graves Commission

The current Charters of the Commonwealth War Graves Commission consist of two documents—the Original Charter of Incorporation dated May 21, 1917 and the new Supplemental Charter dated June 8, 1964. Under these Charters the Commission is entrusted with the marking and maintenance in perpetuity of the graves of those of the British Empire and Commonwealth Armed Forces who lost their lives between Aug. 4, 1914 and Aug. 31, 1921 and between Sept. 3, 1939 and Dec. 31, 1947 and with the erection of memorials to commemorate those with no known grave.

The Canadian High Commissioner in London, England, is the official Commission member for Canada, the Minister of Veterans Affairs is the Agent of the Commission in Canada, and the office of the Secretary-General of the Canadian Agency is in the Veterans Affairs Building, Ottawa.



# CHAPTER VII.—EDUCATION

## CONSPECTUS

	PAGE		PAGE
<b>Part I.—Formal Education.....</b>	<b>337</b>	Subsection 4. Adult Education.....	364
SECTION 1. THE CURRENT EDUCATION SITUATION.....	337	<b>Part II.—Cultural Activities Related to Education.....</b>	<b>365</b>
SECTION 2. ADMINISTRATION AND ORGANIZATION OF EDUCATION.....	339	SECTION 1. THE ARTS AND EDUCATION....	365
SECTION 3. STATISTICS OF SCHOOLS, UNIVERSITIES AND COLLEGES.....	350	SECTION 2. THE EDUCATIONAL AND CULTURAL FUNCTIONS OF THE CANADIAN BROADCASTING CORPORATION AND THE NATIONAL FILM BOARD.....	373
Subsection 1. Elementary and Secondary Schools.....	355	SECTION 3. THE CANADA COUNCIL.....	375
Subsection 2. Universities and Colleges.....	358	SECTION 4. LIBRARY SERVICES.....	377
Subsection 3. Vocational Education.....	363		

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

## PART I.—FORMAL EDUCATION\*

### Section 1.—The Current Education Situation

The Canadian education scene in the mid-1960s continues to be dominated by the need for the development of ever greater knowledge, skills, understanding and appreciation among the nation's youth in order to prepare them, individually and as a community, for the challenges they are expected to face in the future. It is widely recognized that this need should be met not only by developing still further the élite at the top of the academic pyramid but also by extending the base to include all young persons, whatever their abilities and aptitudes and whatever their social circumstances and financial resources.

The findings of systematic research as well as the sometimes bitter experiences of schoolmen have brought about an increased realization of the great diversity in aptitude patterns among young people. If all are to be educated so that individual potential may be fully realized, it follows that there must be an equal diversity in the programs of study or training. Facilities for those of academic and scholarly inclination have existed for many years so that recent emphasis has been placed upon the provision of programs suited to those of more practical bent and to the introduction of other measures designed to hold students within the formal education systems to ever-increasing levels of age and attainment. The chart on p. 338 shows the extent to which such measures have been successful. The modern-day labour force has little use for the untrained and poorly educated young person but is greatly in need of qualified tradesmen, technicians and professionals. For this reason there has been an upsurge in the building of vocational and composite schools, the establishment of community colleges and the introduction of policies and practices to cope more adequately with individual differences, such as non-graded systems, subject-promotion schemes and the extension of guidance facilities.

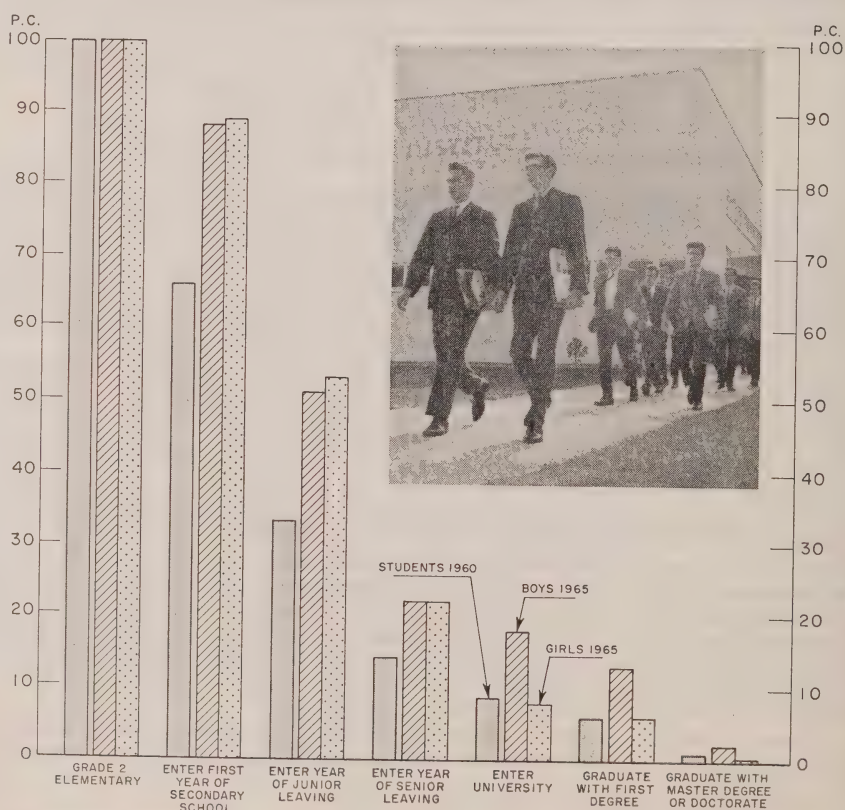
Efforts are also being made to overcome the financial barriers to continuing education. The investigations of demographers and sociologists are confirming and quantifying the

\* Prepared in the Education Division, Dominion Bureau of Statistics.

long-held suspicions that financial constraints are operating to deny education to many Canadians who could profit from it. Various methods are therefore being sought to lighten the financial burden upon the individual and to equalize the rapidly increasing load being carried by the taxpayer. It is now evident that the Federal Government has a key role to play in this matter, particularly in technical and vocational training and in university education—both matters of prime concern to the nation as a whole. Acknowledgement of this fact is to be seen in the increasing activities of the Technical and Vocational Training Branch of the federal Department of Manpower and Immigration, the formation of a federal office to deal with higher education, the founding of a nation-wide Service for Admission to Colleges and Universities, the holding of an interprovincial Ministers' conference on education and manpower, and renewed attempts to introduce uniform methods of statistical reporting.

Thus it appears that ethical considerations concerning the duties of society in the satisfaction of the personal needs of the individual and economic considerations concerning the kinds of individuals required to satisfy the manpower needs of society are combining to encourage the extension and equalization of educational opportunity. The rising costs

### ESTIMATED STUDENT RETENTION TO SPECIFIED LEVELS OF EDUCATION, 1960 AND 1965



of this endeavour are causing a reappraisal of traditional methods of financing education, tending toward the assumption of increasing proportions of the load by higher levels of government. Taken along with other developments in the economic, social and cultural life of the community, this is resulting in the emergence of the federal authority as an important partner in the task of providing for the education of Canadians.

## Section 2.—Administration and Organization of Education

### Responsibility for Education in Canada

Canada is a federal state, in which responsibility for the organization and administration of public education is exercised by the provincial governments. The Federal Government is directly concerned only with the provision of education for certain special groups—some 138,000 Indians, about 6,000 Eskimos, other children in the Territories, inmates of federal penitentiaries and families of members of the Armed Forces on military stations (although whenever possible provincial educational facilities are used). In addition, the Federal Government makes grants for vocational training, provides per capita grants to each province to be divided among its universities and colleges, participates to a considerable extent in informal education and makes grants-in-aid for research personnel and equipment that assist educational institutions indirectly.

Because each of the ten provinces has the authority and responsibility for organizing its education system as it sees fit, organization, policies and practices differ from province to province. Each has a department of education, headed by a minister who is a member of the Cabinet. Ontario has, in addition, a Department of University Affairs under its Minister of Education. Each department is administered by a deputy minister, or director, who is a professional educationist and a public servant. He advises the minister, supervises the department and gives a measure of permanency to its education policy, in general carries out that policy, and is responsible for the enforcement of the Public School Act. The department of education usually also includes: a chief inspector of schools and his staff of local inspectors; directors or supervisors of curricula, technical education, teacher training, home economics, guidance, physical education, audio-visual education, correspondence instruction and adult education; directors or supervisors of other sections (according to the needs of the particular province); and technical personnel and clerks. Quebec operates a dual system, with an associate deputy minister for each of the Roman Catholic and Protestant sectors. In Newfoundland, which has a public denominational system, there is a superintendent for each one of the five denominations recognized by the School Act.

Other provincial departments having some responsibility for operating school programs are: departments of labour, which operate apprenticeship programs; agriculture departments, which operate agriculture schools; departments of the attorney-general or of welfare, which operate reform schools; and departments of lands and forests, which operate forest ranger schools.

From the beginning each department of education has undertaken, among other things, to provide: (1) inspection services to ensure maintenance of standards; (2) the training and certification of teachers; (3) courses of study and lists of prescribed or approved textbooks; (4) financial assistance to local authorities in the construction and operation of schools; and (5) regulations for the guidance of trustees and teachers. In return, each department requires regular reports from the schools. When first introduced, government grants to schools were based on such factors as the number of teachers, enrolment, days in session and attendance. Somewhat later, special grants were introduced in most provinces to meet a variety of expenses, such as the construction of the first school, the organizing of



special classes, providing transportation for pupils, school lunches and other contingencies. A number of provinces made provision for equalization grants, and now the majority have a foundation program of one kind or another.

The work of the departments of education has grown considerably. Many have expanded their services in the fields of health, audio-visual aids, art, music, agriculture, special education, correspondence courses and prevocational and trade courses. At the same time there has been an increasing delegation of authority to local boards and school staffs. One illustration of this tendency is a reduction in the number of departmental (external) year-end examinations. Few provinces now provide for more than one or two such examinations—at the end of the final and, in some cases, also at the end of the second last year of the secondary school course. Another illustration is the increasing use of approved lists of textbooks from which local authorities may make their own choice, instead of lists of prescribed texts. Courses of study are now seldom planned only by one or two experts in the department; instead they result from conferences and workshops including active teachers and other interested individuals or bodies. In most provinces “curriculum construction” is considered to be a continuous procedure.

### Local Units of Administration

In all provinces, school laws provide for the establishment and operation of schools by local education authorities, which operate under the Public School Act and are held responsible to the provincial government and resident ratepayers for the actual operation of the local schools. Through the delegation of authority, education becomes a provincial-local partnership with the degree of decentralization reviewed intermittently. Questions concerning the allocation of responsibilities between the provincial and local authorities will probably occupy the minds of Canadians for decades to come, as well as problems such as the optimum size of administrative units, schools and classes.

At one time, the provincial departments delegated authority to publicly elected or appointed boards, which functioned as corporations under the School Acts and regulations. These three-man boards were expected to establish and maintain a school, select a qualified teacher and prepare a budget for presentation to the municipal authorities. As towns and cities developed, the original boards remained as units but provision was made in the legislation for urban school boards with more members and generally (although not always) with responsibility for both the elementary and secondary schools.

Rural school districts were typically about four miles square, their size determined largely by the need for the school to be within walking distance of the homes it served. As time went by the realization grew that the manner of living was changing, that farms were becoming much larger and more mechanized, that most farmers had trucks and automobiles, that there were fewer children to the square mile and that it would be more efficient and economical to provide central schools and transportation. There was also considerable discontent among the teachers, as security of tenure was rarely found under the three-man local school boards. Further, the shortage of teachers, differences among the districts in their ability to pay for education, and a demand for secondary school facilities in rural areas all combined to force the establishment of larger administrative units.

Under provincial legislation, larger units are now in effect in Nova Scotia, New Brunswick, Saskatchewan, Alberta and British Columbia, and their establishment is being encouraged and promoted in Newfoundland, Prince Edward Island and Manitoba. (Newfoundland is a somewhat special case in which the denominational school districts, already rather large geographically, are proceeding toward some kind of amalgamation of provision of joint services.) Ontario has abolished the local school sections in favour of township school areas and is now beginning to promote reorganization into county units with responsibility for both elementary and secondary education. In Quebec, the greater part of the Protestant system is organized into larger units and the Catholic system has recently completed a reorganization of its administrative structure (for secondary education) into 55 regions.

In some provinces the local boards disappeared when the larger units were formed; in others they were retained with limited powers and duties. The larger unit boards accept responsibility for providing the necessary staff, buildings, equipment and transportation. Where local boards remain, they usually function in an advisory capacity, and look after the buildings and grounds.

### Elementary and Secondary Education

Enrolment in elementary and secondary schools has been increasing year by year until, in 1964-65, there were 4,972,000 pupils enrolled in public schools, 200,000 in private schools and 70,000 in various vocational schools and courses, both public and private.

Each September, most Canadian children of age six enter an eight-grade elementary school. At about 14 years of age, nearly 90 p.c. of those who entered grade 1 enter a regular four- or five-year secondary school. From the graduates at this level, a limited number—about 13 p.c. of those who began school—go on to college or university where rather more than half of them pursue a three- or four-year program leading to a bachelor degree in arts or science and the remainder enrol in various professional courses such as commerce, education, engineering, law, medicine, theology, etc.

The 8-4 plan leading from grade 1 to university was for many years the basic plan for organizing the curriculum and schools, other than those of Catholic Quebec. This plan, although still followed in some rural, village, town and city schools, has been modified from time to time in various provinces, cities or groups of schools, as it appeared inadequate to meet the demands arising from new aims of education. There are a number of variants to be found at present in Canada: the addition of one or even two kindergarten years at the beginning of the system; the addition of an extra year to high school, providing five rather than four years of secondary schooling; the introduction of junior high schools, changing the organization to a 6-3-3 or 6-3-4 plan; or again, the combining of the first six years of elementary school into two units, each designed to reach certain specified goals during a three-year period. A fairly recent innovation is the establishment of junior colleges, affiliated with universities, in which the last one or two years of high school and the first one or two years of college are offered.

The first secondary schools were predominantly academic and prepared their pupils for entry into university. Until recent years, vocational schools were to be found only in the large cities, although schools in some of the smaller centres did provide a few commercial and technical subjects as options in the academic curriculum. Today, besides commercial and vocational high schools, there are, in increasing number, composite and regional high schools that provide courses in home economics, agriculture, shop-work and commercial subjects as well as in the regular secondary school subjects. The number of subjects offered has also increased greatly and the number of options available, particularly in certain provinces, provides a wide choice for pupils with a great variety of abilities and aims. Three programs can frequently be distinguished—the university entrance course, the general course for those who wish to complete an academic type of program before entering employment, and vocational courses for those who wish to enter skilled trades. Thus, attention is given to the minority who will go on to institutions of higher learning, while the majority, who will look for jobs, are prepared for entry to their chosen occupation. Considerable emphasis has been placed on music, art, physical education, guidance and group activities but not at the expense of the basic subjects that provide a general foundation.

### Education in the Catholic Schools of Quebec

Although Catholic education in Quebec has been considered sufficiently different to warrant a separate description, it is conducted after much the same fashion as education in the other provinces. All types of schools familiar to Canadians elsewhere are to be found in Quebec, including ungraded rural elementary schools, graded urban schools, secondary schools with academic bias, vocational schools and, at the top, universities. The administrative structure of school boards, inspectors and central departmental officials is also broadly similar. Such differences as exist are of historical origin and arise out of the



traditional French-Canadian conception of education, which involved the belief that the greatest contribution by French Canadians to Canada's future could be made by preserving their language and culture, that religion should be an integral part of education, that boys and girls were best educated separately, that education was a privilege and that those who were considering entering the professions might make such a decision at the end of the elementary school. Education was regarded as a means of producing good citizens by training boys to become bread-winners and girls to become home-makers.

A unique feature of the Quebec Catholic system is the existence of the *collèges classiques* which, operated by religious orders, serve by affiliation as the arts faculties of the French-language universities. They accept students who have completed grade 7 and provide an eight-year course leading to the *baccalauréat* and entrance to certain university faculties. Out of the scholarly traditions of this system has arisen the cultural and professional élite in law, medicine, theology and the arts in French Canada.

The political, social and economic ferment of the present decade is being reflected in education and is resulting in rapid and complex changes in the organizational structure and in curriculum content. Government functions previously scattered among several departments have been brought together under a new department of education, created in 1964. The new department took upon itself the task of completely reorganizing education in the province, introducing new policies and practices, many of them on the recommendation of the Royal Commission on Education, established in 1961 under the chairmanship of Monsignor Alphonse-Marie Parent. The assessment of resources required to meet present and future needs was seen as one of the prime tasks; a directorate of planning was set up and newly created regional school commissions were assigned planning functions. It was evident that Quebec was behind most other provinces in the provision of education for a technological age, and so the early concern has been with the expansion of facilities for relating the educational process to the world of work—the building of school plant, the establishment of consultative committees with the trades and professions, and the promotion of guidance and counselling in the schools.

Regulations have been announced providing for the introduction of a six-year elementary program, in general with promotion according to age, and a five-year secondary course with a highly diversified curriculum and a subject-promotion scheme. Pre-university and professional education is to be offered for a further two and sometimes three years at special institutes to be established for the purpose. Other major changes involve the departmental examinations system, teacher training, the establishment of regional offices of the department, and many financial provisions, including arrangements with private schools for the payment of fees and increased availability of bursaries and scholarships.

**Newfoundland.**—The topographical and economic circumstances of the Island influenced the development of education as did pockets of settlers establishing themselves in outposts which were relatively self-sufficient. Active leadership of the churches and homogeneity of the village populations provided a minimum of overlapping of denominations except in a few industrial areas or the larger cities. A Royal Commission is considering the efficiency of the present organization with a view to increasing the education level of the Island's population.

The present system is predominantly denominational although there are amalgamated and community schools operated by the Department of Education. The schools are administered on a local basis by the five largest denominational groups—Roman Catholic, Anglican, United Church, Salvation Army and Pentecostal Mission. These operate under five superintendents, each in charge of the schools of his faith, and a member of the Department. Local boards, including the local clergymen as members, select teachers, pay salaries from government grants and look after the school property. All schools follow the provincial course of study and examinations, scholarships and diplomas are determined by an interdenominational body representing the major denominations and the Department.



**Education in the Yukon and Northwest Territories.**—In the Yukon Territory, the school system is operated by the Territorial Government through a superintendent and staff at Whitehorse responsible to the Commissioner of the Territory who, in turn, receives instructions from the Minister of Indian Affairs and Northern Development in Ottawa. The Education Division of the Northern Administration Branch of the Department of Indian Affairs and Northern Development offers advice on education policy to the Minister and Territorial authorities. All schools, both public and separate, with the exception of the Carcross Indian Residential School (operated by the Department in co-operation with the Territorial Government) and St. Mary's School (a quasi-private school operated by the Roman Catholic Church in Dawson) come under the direct ownership and operation of the Government of the Yukon Territory. Although there is provision for three types of schools in the Yukon—public, separate and Indian—most of the Indian children attend either the public or the separate schools. In 1965, the population was 15,000 of whom 2,400 were Indians. By choice, the schools of the Yukon follow the British Columbia education curricula.

In the Northwest Territories (the Districts of Mackenzie, Franklin and Keewatin) the school system is operated by the Education Division of the Northern Administration Branch of the Department of Indian Affairs and Northern Development by agreement with the Government of the Northwest Territories. The Federal Government, as the operating agency, finances school operation and receives from the Territorial Government the pupil cost for pupils who are neither Indian nor Eskimo. Enrolment for the 1965-66 term included 2,987 Eskimos, 1,285 Indians and 2,924 others, a total of 7,196 in the Northwest Territories and Arctic Quebec combined. Yellowknife public and separate school districts and Hay River separate school district are financed partly by local taxation and partly through grants-in-aid from the Federal and Northwest Territorial Governments. Inspection and supervisory services are provided by the Education Division. Alberta education curricula, subject to increasing modifications, are prescribed for the schools of the Northwest Territories. Expansion is taking place in school accommodation and basic elementary and secondary education is being provided for all children in the Territories and for Eskimo children in northern Quebec, as well as vocational training for them and for young adults showing interest and special aptitude. The program, which is an integrated one for the children of all races in the North, provides for the construction of schools and student residences, curricula designed for a northern environment, bursaries and other student aids, and special vocational training projects appropriate to both local craftsmanship and mechanical trades in such fields as construction, transportation and mining.

### Special Education

Interest is increasing in the education of exceptional children—those who deviate so far from the normal as to require special educational facilities. New types of special classes are sometimes started by parents of children with a common disability, who band together to provide help and show the need for such service, which is then taken over by public bodies. Progress in providing such education varies from province to province. It is most commonly found in the city school systems; in rural areas there is usually little provision for the child who needs special attention, except for those who are admitted to residential institutions. There are six schools for the blind, 13 schools for the deaf and a number of training schools for mental defectives. Special classes are found in tuberculosis sanatoria, mental hospitals and reformatories. In many cities, there are classes for the hard-of-hearing, the partly blind and other physically and mentally handicapped children and a few for the highly gifted.

### Teachers

All provinces require candidates for elementary school teacher certificates to have high school completion or better, with at least one year of professional training in a faculty of education or a teachers' college. The training usually consists of professional and academic courses, and some time spent in practice teaching. High school teachers are generally

university graduates who have taken an additional year of professional training in a college of education, or who have graduated with a degree in education. The trend is for the government departments of education to give the universities responsibility for the training of elementary school teachers as well as secondary school teachers. In Newfoundland, Prince Edward Island, Manitoba, Alberta and British Columbia all teacher training is conducted at the university, where three or four different courses leading to a degree are provided. About three quarters of the time is devoted to academic courses in arts and science and the remainder to professional courses. In some of the other provinces, close contact is maintained between teacher training college and university.

In 1964-65 there were 122 normal schools and teachers' colleges and 26 faculties or colleges of education engaged in teacher training with a total enrolment approaching 38,000. In the same year there were 191,000 full-time teachers in the public elementary and secondary schools throughout the 10 provinces and 12,000 in the private schools.

Most teachers in these schools are paid according to a local salary schedule based on years of training and experience; they contribute to a provincial superannuation scheme and are members of a provincial professional organization. In 1964-65 about 66 p.c. of them were women, of whom a little more than half were married. The median salary of all teachers and principals in the nine provinces other than Quebec was \$4,954, an increase of 4.9 p.c. over the previous year. Apart from teachers in Quebec concerning whom adequate data were not available, about 11 p.c. of those in elementary schools and about 72 p.c. of those in secondary schools had university degrees.

### Higher Education

Out of the two distinct cultures upon which the Canadian nation is founded have arisen two somewhat different systems of higher education. One, originally patterned on the French system before the secularization of higher education in France with the majority of the institutions under control of Catholic orders or groups, has in recent years adapted more and more to North American traditions but still retains distinctively French characteristics. The other was originally designed more according to English, Scottish and United States practices, instruction being given in English and controlled by a variety of groups—religious denominations, governments and private non-denominational bodies. Institutions comprising a third small group and giving instruction to both English-speaking and French-speaking students are operated or controlled mainly by Catholic groups, although the first such bilingual institution to be established—the University of Ottawa—was reorganized in 1965 under a non-denominational board of governors.

Large universities, with numerous faculties and provision for graduate study in many fields, are comparatively recent phenomena. Until the middle of the nineteenth century, higher education in Canada included little more than arts and theological training. From that time, more instruction in science and certain professional fields was gradually introduced. Graduate studies, to judge by the number of earned doctorates, did not acquire numerical importance until after 1920. Only for the past 20 years or so have more than 100 earned doctorates been granted annually.

Civil legislation regarding the establishment of new institutions, or changes in existing ones, is usually enacted by provincial legislatures, except for federal military colleges and a few institutions originally established by Act of the Canadian Parliament. Once an institution is legally chartered, control is vested in its governing body, the membership of which is indicated in the charter. The line of authority runs from the board of governors through the president (or *recteur*) to the senate and deans and the faculty as a whole.

The composition of the board of governors varies according to the type of institution. Provincial universities normally have government representation; church-related institutions have clergymen. Nearly all boards have either direct representation from the business community, alumni associations and other organizations, or are advised by these groups through advisory boards or committees. The size of the board varies from a very few to over forty. It has ultimate control of the university and normally reserves to



itself complete financial powers, including the appointment of the president and most other staff. On occasion there will be faculty representation on the board and recently there have been attempts on the part of faculty groups of many institutions to obtain greater representation on the boards of governors. Responsibility for academic affairs is usually delegated to the senate. Composed mainly of faculty members, although there may also be alumni and representatives of non-academic groups included, it is responsible for admission, courses, discipline and the awarding of degrees.

Although there are variations, most students enter a university or the *cours collégial* of a *collège classique* after the completion of from 11 to 13 years of elementary and secondary schooling. In from three to five years, courses of instruction lead to a bachelor's degree in arts, pure science, and such professional fields as engineering, business administration, agriculture, and education. Courses in law, theology, dentistry, medicine and some other fields are longer—usually requiring for admission completion of part or all of a first-degree course in arts or science. For those pursuing graduate studies and research, the second degree is normally the master's or *licence*—at least one year beyond the first degree—and the third is the doctorate, normally requiring at least two additional years beyond the second degree.

There are about 400 institutions of higher education in Canada, of which about 50 have degree-granting powers (not including about a score that confer degrees in theology only). Full-time enrolment in the fall of 1965 was 201,000, a 13-p.c. rise over the previous year. The tremendous increase in demand for university places in recent years has resulted in a rapidly intensifying crisis in the financing of higher education, and a commission under the chairmanship of Dean Vincent Bladen of the University of Toronto was set up in 1963 by the then Canadian Universities Foundation, now the Association of Universities and Colleges of Canada, to study the financing of higher education in Canada. The Commission presented its report in the fall of 1965; among its recommendations were many referring to increased federal support for the universities.

In addition to the full-time university-grade enrolment mentioned above, almost as many students are enrolled at the pre-matriculation level or are taking university-grade courses on a part-time basis, whether in the evenings, during summer session or by correspondence. In 1964-65 over 33,000 students graduated with first degrees or equivalent diplomas, over 4,000 graduated at the master level, and 569 earned Ph.D. or equivalent doctoral degrees.

### Adult Education

A variety of opportunities is provided to adults for further academic, vocational and cultural experiences beyond the regular full-time school system for young people. Each province has developed its own programs, operated mainly by local school boards and provincial universities and supplemented by independent universities and private organizations. The Federal Government sponsors some adult education programs and provides grants-in-aid to the province for others. Co-ordination of these programs is secured through voluntary associations at national and provincial levels.

In 1964-65, total course enrolment in adult education (as defined by UNESCO) was well over 3,000,000. Two thirds of the enrolment was in professional and vocational training, including university-sponsored refresher courses and technical, trade, agricultural and business courses, under various auspices. Another 18 p.c. was in health and social education courses, including courses in marriage preparation, citizenship training, first-aid, water safety, child care, nutrition, and courses designed to assist in the treatment or prevention of specific diseases. Academic courses leading to a high school diploma or university degree accounted for nearly 8 p.c. of the total enrolment and fine arts and other cultural subjects for the remainder.



A survey of participants in further education, taken in 1960 using a 1-p.c. sample of the population 15 years of age or over, indicated that a typical student was male, married, about 31 years of age, had completed secondary schooling and had worked in a clerical or similar occupation.

Many public and private institutions and organizations also sponsor informal public lectures, film showings, guided tours, musical and dramatic performances and similar activities of an educational nature for adults. Workshops, conferences and residential adult education, as well as regular courses, help to prepare those who staff these activities.

### **How Education Costs are Met**

In 1964, about 8 p.c. of Canada's total national income was spent on formal education. Almost 19 p.c. of all municipal, provincial and federal revenue went for education and of the amount so spent, the municipalities provided 32 p.c. and the provinces 45 p.c.

As stated on p. 340, the actual operation of public elementary and secondary schools is in the hands of the local elected or appointed school boards which determine the budgets and therefore the amount of taxes required for school purposes. In most cases, these taxes are levied and collected for the boards by the municipalities; however, in those areas where there is no municipal organization the school boards have the power to levy and collect taxes for school purposes. At present, local governments provide about half of the cost of operating the public schools, provincial grants provide over 46 p.c. and the remainder is obtained from various other sources. Except in Newfoundland, fees are almost non-existent. Four provinces—British Columbia, Alberta, Manitoba and Nova Scotia—pay operating grants on an equalization formula and thus ensure at least a minimum level of education throughout the province; the standard is determined either in terms of so much per pupil, or from an established salary scale for teachers with a prescribed teacher-pupil ratio, or by some combination of these.

In Newfoundland where municipal organization scarcely exists outside certain larger centres, there are three school-tax areas (centres). Consequently only about 1.2 p.c. of school revenue is provided by local taxation; the province provides about 87 p.c. and most of the remainder is paid by parents in the form of fees. In Prince Edward Island where there is no municipal organization outside of the cities of Charlottetown and Summerside, the school boards levy and collect property and poll taxes but the province provides about two thirds of the operating costs. Ontario and Saskatchewan make use of various equalization and incentive grants and New Brunswick uses a combination of a basic grant per pupil and special grants. Most provinces provide grants for school buildings and equipment, establish loan funds, and guarantee debentures for school purposes and assist in selling them.

In 1964, universities and colleges received 62 p.c. of their current operating funds from provincial governments and the Federal Government, 25 p.c. from fees, 3 p.c. from endowments and gifts and 10 p.c. from a variety of other sources. Private schools and colleges are normally supported by student fees, endowment income, and gifts and support from sponsoring bodies.

### **Trade and Technical Education and Training**

Increasing use of automated processes in business and industry is resulting in a shrinking market for unskilled and semi-skilled workers. Early school dropouts are finding it increasingly difficult to find suitable employment and many are now trying to acquire in their adult years the general education or training in the skilled trades that they missed in their youth. Those persons still in the regular school system are tending to remain longer and go farther in the system, partly because of the changing attitudes of society toward education and partly for economic reasons.

Hand in hand with this growing demand for better educational facilities, educators are striving to provide comprehensive programs at all levels to meet the needs not only of the university-bound but also of the great majority who require adequate preparation for early entry into the labour force. It is now accepted that vocational education for adults as well as for youths is a public responsibility which must be provided, as needed, throughout man's working life. Education of this nature is of national concern and has a direct impact upon material prosperity, the national economy and the standard of living.

The pattern of vocational education in Canada varies from province to province and there are variations within the provinces. However, there are three basic types of institute offering vocational education—secondary schools, trade schools and post-secondary institutes of technology. Many municipal school boards provide vocational courses as part of the regular secondary school program in technical or composite-type schools. Students in these schools get some general vocational training or training in certain specific fields, such as typing or auto-mechanics, along with instruction in general academic or cultural subjects.

Trade schools, on the other hand, are open only to those who have passed the provincial school-leaving age and have left the regular school system. These schools offer specialized training and their purpose is to develop competent tradesmen. Courses at the trade level do not usually require high school graduation; the grade level demanded, which varies according to province or trade, ranges from grade 8 to grade 12.

The third type, the institutes of technology, operate at a higher level of training. Enrolment in the institutes presupposes high school graduation or at least high school standing in such relevant subjects as mathematics and the sciences. Graduates from institutes of technology are awarded diplomas of applied arts or diplomas of technology and form an essential link between professional engineers or administrators on the one hand and qualified craftsmen on the other. Most of the institutes of technology and trade schools across Canada are provincially operated.

In addition to the vocational education and training provided by these three types of publicly operated schools, many private business colleges and trade schools offer a wide variety of business, trade and technical courses, some through correspondence. Vocational education is also carried out under a system of apprenticeship training. Such training is given mainly on the job, with classes taken at the trade schools either during the evening or on a full-time basis during the day for periods ranging from three to 10 weeks a year.

Recognizing the importance of a high level of occupational and technical competence in the economic development of the country, the Federal Government through the Technical and Vocational Training Branch of the Department of Manpower and Immigration assists the provinces in the development of programs of technical education at different levels—for youth preparing to enter the labour market, for trade and other occupational training and re-training of adults (pre-employment and up-grading courses), and for advanced technical training. To this end, the Technical and Vocational Training Assistance Act was passed by the Federal Government in 1961 to provide financial assistance to the provinces for vocational training. The following specific measures were agreed upon by the federal and provincial governments: (1) a capital assistance program; (2) nine other programs covering technical and vocational high school training, technician training, trade and other occupational training, training in co-operation with industry, training of the unemployed, training of the disabled, training of technical and vocational teachers, training for federal departments and agencies, and student aid; and (3) an Apprenticeship Training Agreement.

The need for further research into the whole field of manpower needs prompted the later addition of a tenth program to the nine mentioned under (2) above. This program—manpower requirements and manpower training research—is designed to stimulate and encourage research projects undertaken in the provinces for providing information relating to technical and vocational training and manpower requirements, including the improvement of training programs and methods and the determination of manpower requirements. The federal contribution is 50 p.c. of provincial expenditures.

The capital assistance program, under which the Federal Government pays 75 p.c. of the provincial expenditure up to a specified total for each province, has given a tremendous impetus to the development of training facilities. During the period Apr. 1, 1961 to Mar. 31, 1966, projects valued at over \$1,102,000,000 were approved, which, when all completed, will provide a total of 352,145 new places for students, most of whom will be enrolled in two- or three-year courses. These included the construction of 455 new high schools with facilities for vocational training plus major additions to 116 such schools; construction of 70 new trade schools and enlargement of 91 existing trade schools; and construction of 18 new technical institutes plus major additions to 20 existing institutes. In addition, 129 minor projects were undertaken involving extension to existing schools. The additional facilities are summarized by province as follows:—

<i>Province or Territory</i>	<i>New Schools</i>	<i>Major Projects Involving Additions to Existing Schools</i>	<i>Minor Projects Involving Additions to Existing Schools</i>	<i>New Student Places</i>
	No.	No.	No.	No.
Newfoundland.....	13	1	2	3,570
Prince Edward Island.....	2	—	6	1,486
Nova Scotia.....	7	8	1	2,838
New Brunswick.....	6	3	32	2,645
Quebec.....	122	67	7	73,214
Ontario.....	291	71	25	181,618
Manitoba.....	4	17	47	5,602
Saskatchewan.....	10	6	—	10,784
Alberta.....	46	16	4	34,242
British Columbia.....	41	36	5	35,634
Yukon Territory.....	1	1	—	482
Northwest Territories.....	—	1	—	30
<b>TOTALS.....</b>	<b>543</b>	<b>227</b>	<b>129</b>	<b>352,145</b>

In addition to assisting financially with the provision of physical facilities for training, the Federal Government shares in the operating costs of the various programs conducted under the Technical and Vocational Training Agreements, including the Apprenticeship Training Agreement. These programs are closely correlated with the common objectives of training the country's labour force at all levels below university and in all fields.

Of particular concern is the need to up-grade both the educational and vocational competence levels of those already in the labour force. The Federal Government undertakes to share the expenditures made by employers in developing and operating approved training programs for their employees, particularly basic training for skill development, re-training of technologically displaced persons, and apprenticeship training; higher level and other training projects are also encouraged. A Manpower Consultative Service has been established to assist industry with problems encountered in the fields of manpower training and employment and to take part in the manpower research program.



A limited survey of organized training programs for apprentices, technicians, first-line supervisors and skilled tradesmen in such fields as manufacturing, transportation and communications, mining, quarrying and oil wells, and public utilities was conducted by the Dominion Bureau of Statistics in 1963 in co-operation with the Economics and Research Branch of the Department of Labour. Results revealed that almost 17 p.c. of the establishments surveyed conducted some organized training programs, with an incidence of 8 p.c. for establishments employing from 15 to 50 persons and 25 p.c. for those with 50 or more employees. In addition to the establishments that reported some form of organized program for their staffs, many others indicated that they gave tangible encouragement to individual employees by contributing to the payment of fees for courses or by other means.

### Federal Contributions to Education

Some 24 Federal Government departments or agencies contribute in one way or another to education. Interest in education in the provinces by the Federal Government stems from its realization of the contribution of schooling to production, services and trade, and the benefits from research. The chief contributions are therefore sums or grants to assist the provincial departments with their vocational programs and grants to the universities. The University Grants Program is administered by the Association of Universities and Colleges of Canada with amounts based on a rate of \$2 per head of population (increased to \$5 for the school year 1966-67), the provincial portions being allocated to the universities according to their full-time enrolment. The student loans program is operated under the Canada Student Loans Act (SC 1964, c. 24), assented to July 28, 1964, when \$40,000,000 was set aside to enable full-time students to borrow up to \$1,000 annually, interest-free for five years—the \$5,000 or less to be repaid with interest commencing six months after the student has graduated. The loan scheme is operated by the chartered banks with the students being approved for loans by the universities and institutes of technology. The Federal Government guarantees the loans and pays the interest while the student is attending college. The amount allocated will be increased year by year in proportion to the increase in the number of persons 18-24 years of age; in 1965-66 it was \$60,000,000.

Under the Technical and Vocational Assistance Act (SC 1960-61, c. 6), the Federal Government, until 1975, contributes 75 p.c. of the total spent by a province on buildings and equipment for approved projects as determined under the agreements between the federal and provincial governments which cover some ten programs. These programs cover high school vocational classes, trade schools, institutes of technology, organized training on-the-job, apprenticeship, rehabilitation, management education, etc. (see also p. 347). As already mentioned (p. 348), the capital expenditure for vocational training in the provinces during the period Apr. 1, 1961 to Mar. 31, 1966 totalled over \$1,102,000,000; of this amount, over \$620,000,000 came from the federal coffers.

The Federal Government through the Canada Council in 1957 provided an amount of \$100,000,000, half of which was to be distributed among the universities for specified building and equipment purposes, similar to the distribution of grants. Interest from the remaining \$50,000,000 was to be used to assist in the development of the arts, humanities and social sciences mainly through scholarships (see pp. 375-376).

Other contributions are more indirect and include scholarships, research grants and reports or services of value to the school. Research grants are made by the National Research Council, the Defence Research Board, the Department of National Health and Welfare, the Department of Manpower and Immigration and other agencies. Some Departments such as Agriculture, Health and Welfare, etc., provide materials and publica-

tions of value in the school programs and the National Museum, the National Gallery, the National Film Board and the Canadian Broadcasting Corporation contribute directly or indirectly to various school programs (see pp. 365-377).

More directly, the Federal Government is responsible for the education of the Eskimos, Indians and white persons in the Territories (see p. 343), the Indians on the reserves, prisoners in penitentiaries, members of the Armed Services and their dependants and in-service training for permanent personnel. It also assists in citizenship training and other out-of-school informal education activities.

**External Aid.**—Some 11,000 full-time university students, a large proportion of them in the graduate schools, come to Canada each year from many countries; the largest number are from the United States although the number from Commonwealth and other countries is increasing very rapidly. The external enrolment in 1965 represented about 5.5 p.c. of the total enrolment. The number of such students is now about double the number of Canadians studying abroad. (See Table 9, p. 359.)

Canada's External Aid Office is responsible for the operation and administration of external assistance programs, including educational assistance to Commonwealth and other countries. In the academic year 1965-66, such assistance consisted of 439 teachers including teacher college personnel, 101 university staff members sent out individually or in teams, and 435 (calendar year 1965) technical advisers in vocational education, health and welfare, government administration and other areas as well as the provision of such services as television facilities, film units, farm forums and radio broadcasts. More than 5,000 persons under the UN agencies and Commonwealth scholars have been trained in Canada since 1950; the number enrolled in 1965-66 was 2,538, almost double the 1,412 in 1964-65. The objective of this training is the development of an indigenous training capability in the emerging countries and persons trained in Canada are expected to return to their homelands to convey their skills to others either in educational institutions or in informal situations.

From 1960 to 1965 Canada's expenditures abroad on capital projects in aid of education amounted to about \$7,000,000. Capital assistance includes the building and equipping of educational institutions and the provision of Canadian staff for a number of years. This staff is replaced by native persons after they receive appropriate training in Canada. The construction of a trades training centre in Ghana is an example of this type of project. Other major projects include Canada Hall, a residence for the University of the West Indies in Trinidad; technical equipment to schools in Malaysia and Tanganyika; and audio-visual equipment, handicraft supplies and other teaching aids to various countries.

In 1965-66, under the Commonwealth Scholarship and Fellowship Plan which began in 1960, some 222 Commonwealth students were brought to Canada (see also p. 179).

Canada has a number of voluntary agencies interested in aiding students from other countries, several of which receive some assistance from the Federal Government. Among these are the Canadian University Service Overseas, the African Students Foundation and the World University Service of Canada.

### Section. 3—Statistics of Schools, Universities and Colleges

Elementary and secondary schools may be classified as either publicly controlled or private. The publicly controlled schools include: the public and separate schools under local school boards—by far the most numerous group; provincial schools which at this

level are limited mainly to trade schools, correspondence courses, and special schools for the blind and deaf; and federal schools for Indians, for children in the Northwest Territories, and for the children of members of the Armed Forces overseas. Private schools may be academic, business (commercial), trade, technical, correspondence or even a combination of these.

Institutions of higher education may be provincial, church, independent universities and colleges, or federal military colleges. In addition there are institutes of technology, teachers' colleges, theological institutions and schools for such specialized fields as nursing, agriculture, paper-making, fisheries, graphic and fine arts, languages, etc. Some of these are provincial and some private.

Most organized classes for adults operate under the auspices of universities, colleges, local school boards, churches or community organizations.

Table 1 shows full-time enrolment at all levels each year for the period 1956-57 to 1965-66 and Table 2 shows the number of schools, teachers and pupils for all types of education institutions, classified by province, for the school year 1964-65. In all types of schools the number of pupils has been increasing. The increase was first noticed at the elementary level some six years after the birth rate began to rise during the war years. About eight years later the children born during the War were entering high school and four years later they began entering university. The number of teachers is rather closely related to the number of students although the trend is toward larger classes. On the other hand, the number of schools has remained fairly constant, the increase caused by the construction of new and larger schools in urban areas being counterbalanced by the closing of many one-room rural schools.

**1.—Full-Time Enrolment in Elementary and Secondary Schools, and in Universities and Colleges, School Years 1956-57 to 1965-66**

School Year	Elementary and Secondary Schools <sup>1</sup>			Universities and Colleges
	Elementary Grades <sup>2</sup>	Secondary Grades	Total	
	No.	No.	No.	No.
1956-57.....	2,842,501	653,938	3,496,439	78,504
1957-58.....	2,959,467	646,360	3,605,827	86,754
1958-59.....	3,084,346	748,098	3,832,444	94,994
1959-60.....	3,208,269	802,690	4,010,959	101,934
1960-61.....	3,319,450	882,247	4,201,697	113,864
1961-62.....	3,404,654	1,002,723	4,407,377	128,894
1962-63.....	3,490,093	1,099,394	4,589,487	141,388
1963-64.....	3,595,631 <sup>3</sup>	1,185,906 <sup>3</sup>	4,781,537 <sup>3</sup>	158,388
1964-65.....	3,704,256 <sup>3</sup>	1,266,177 <sup>3</sup>	4,971,692 <sup>3,4</sup>	178,238
1965-66.....	3,794,000 <sup>p</sup>	1,331,800 <sup>p</sup>	5,125,800 <sup>p</sup>	205,888

<sup>1</sup> Includes publicly controlled, private and federal schools.

<sup>2</sup> From kindergarten to and including grade 8 in all provinces except Quebec; grade 8 included with secondary grades in Quebec.

<sup>3</sup> Includes preliminary figures for Quebec.

<sup>4</sup> Includes 1,259 pupils not classifiable by grade.



**2.—Schools, Teachers and Enrolment for All Types of Education Institutions,  
by Province, School Year 1964-65**

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	No.	No.	No.	No.	No.	No.
<b>Elementary and Secondary Education—</b>						
Public and Separate—						
Schools.....	1,266	432	1,025	1,113	5,108 <sup>p</sup>	6,772
Teachers.....	5,351	1,166	7,638	6,577	59,010 <sup>p</sup>	62,291
Pupils.....	144,129	27,787	197,496	164,124	1,311,728 <sup>p</sup>	1,673,774
Overseas (DND)—						
Schools.....	...	...	...	...	...	...
Teachers.....	...	...	...	...	...	...
Pupils.....	...	...	...	...	...	...
Indian—1						
Schools.....	—	1	8	9	25	100
Teachers.....	—	2	33	25	141	271
Pupils.....	—	43	818	686	2,532	7,266
Blind—						
Schools.....	—	—	1	—	3 <sup>p</sup>	1
Teachers.....	—	—	26	—	55 <sup>p</sup>	36
Pupils (home province).....	38	7	83	40	284 <sup>p</sup>	199
Deaf—						
Schools.....	—	1	1	—	5 <sup>p</sup>	2
Teachers.....	—	3	40	—	166 <sup>p</sup>	105
Pupils (home province).....	50	13	155	115	1,025 <sup>p</sup>	727
Private—						
Schools.....	2	2	24	11	615 <sup>p</sup>	229
Teachers.....	4	22	300	135	6,640 <sup>p</sup>	2,817
Pupils.....	37	497	6,201	1,791	97,507 <sup>p</sup>	44,470
<b>Higher Education—</b>						
Institutions.....	3	2	16	12	222	65
Students (full-time university grade).....	2,652	802	8,509	5,773	59,400	50,793
<b>Teacher-Training—</b>						
Teachers' Colleges—						
Institutions.....	—	1	1	1	107	11
Teachers.....	—	3	36	50	1,072	280
Students.....	—	79	599	1,054	12,920	6,475
Faculties of Education—						
Faculties <sup>2</sup> .....	1	1	5	3	5	2
Teachers.....	22	2	16	16	141	84
Students <sup>2</sup> .....	1,461	46	338	316	2,639	952
<b>Vocational Education—</b>						
Enrolment—						
Publicly sponsored vocational courses <sup>3</sup> .....	4,361	507	1,943	3,403	29,625 {	33,033
Trade courses (apprentices) <sup>4</sup> .....	562	185	1,469	2,718		4,382
Vocational high school courses.....	421	528	1,970	6,697		149,378
Post-secondary courses.....	181	—	83	270		5,545
Private business schools (1963-64).....	—	5	502	575	8,618	5,757
Private trade schools (1963-64).....	—	—	191	5	8,595	3,732
<b>Adult Education—</b>						
Part-Time Enrolment—						
Universities (1963-64).....	2,086	896	9,757	4,217	67,520	76,980
Provincial governments (1963-64).....	3,515	1,590	21,298	22,129	378,976	196,775

For footnotes, see end of table.

**2.—Schools, Teachers and Enrolment for All Types of Education Institutions,  
by Province, School Year 1964-65—concluded**

Item	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.
<b>Elementary and Secondary Education—</b>						
Public and Separate—						
Schools.....	1,661	1,537	1,219	1,388	26	21,547
Teachers.....	8,975	9,996	14,702	14,879	191	190,776
Pupils.....	218,770	233,213	350,906	399,944	3,842	4,725,713
Overseas (DND)—						
Schools.....	...	...	...	...	...	22
Teachers.....	...	...	...	...	...	396
Pupils.....	...	...	...	...	...	7,282
Indian— <sup>1</sup>						
Schools.....	72	71	32	78	1	397
Teachers.....	233	221	178	228	5	1,337
Pupils.....	6,069	5,475	3,836	5,924	141	32,800
Blind—						
Schools.....	—	—	—	1	—	6
Teachers.....	—	—	—	18	—	135
Pupils (home province).....	18	26	25	93	2	815
Deaf—						
Schools.....	1	1	1	1	—	13
Teachers.....	14	26	23	27	—	404
Pupils (home province).....	114	131	118	227	8	2,683
Private—						
Schools.....	54	25	37	136	—	1,135
Teachers.....	580	267	354	1,181	—	12,300
Pupils.....	11,335	4,316	6,292	25,469	—	197,915
<b>Higher Education—</b>						
Institutions.....	11	17	12	10	—	370
Students (full-time university grade).....	9,172	9,603	12,977	18,557	—	178,238
<b>Teacher-Training—</b>						
Teachers' Colleges—						
Institutions.....	1	—	—	—	—	122
Teachers.....	22	—	—	—	—	1,463
Students.....	613	—	—	—	—	21,740
Faculties of Education—						
Faculties <sup>2</sup> .....	2	2	2	3	—	26
Teachers.....	13	78	114	154	—	640
Students <sup>2</sup> .....	362	2,347	3,658	3,799	—	15,918
<b>Vocational Education—</b>						
Enrolment—						
Publicly sponsored vocational courses <sup>3</sup> .....	6,542	4,512	5,595	9,907	397	121,583
Trade courses (apprentices) <sup>4</sup> .....	1,089	1,282	5,595	4,476	—	
Vocational high school courses.....	5,130	5,077	12,652	8,479	77	
Post-secondary courses.....	517	465	2,116	529	—	
Private business schools (1963-64).....	1,386	1,248	1,624	2,504	—	22,214
Private trade schools (1963-64).....	931	392	1,256	859	—	15,956
<b>Adult Education—</b>						
Part-Time Enrolment—						
Universities (1963-64).....	10,037	22,111	40,237	29,570	—	263,411
Provincial governments (1963-64).....	213,573	274,288	153,842	94,284	182	1,672,776 <sup>6</sup>

<sup>1</sup> Day, residential and hospital schools administered by the Federal Government. <sup>2</sup> Also included with "Higher Education". <sup>3</sup> Under Programs 3, 4, 5, 6 and 8 of the Federal-Provincial Agreement, for fiscal year 1963-64. <sup>4</sup> Includes indentured apprentices taking full-time, part-time and correspondence courses. <sup>5</sup> Included with Nova Scotia. <sup>6</sup> Includes enrolment in courses sponsored by public libraries, business colleges, teacher-training institutions and Federal Government departments not distributed by province.

An attempt has been made to tabulate total expenditure on education, including formal education at all levels, vocational training of all types and also expenditure on cultural activities related to education such as adult night classes, fine arts and handicraft courses, and libraries, museums and art galleries. Such expenditure for the year 1962 is presented in Table 3, classified by source. Details of income of school boards for publicly controlled elementary and secondary schools for the years 1961-63 are given at pp. 357-358 and financial statistics for universities and colleges at pp. 361-362.

### 3.—Expenditure on Formal Education, Vocational Training and Related Cultural Activities, by Source of Funds, 1962

Type of Education	Local Taxation	Provincial Government <sup>1</sup>	Federal Government	Fees	Other Sources	Total Expenditure
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Formal Education—</b>						
Elementary and Secondary—						
Public schools.....	738,524	753,352	153,251	4,146	36,610	1,685,883
Handicapped outside the public schools.....	211	10,616	—	—	398	11,225
Government correspondence schools.....	—	1,598	—	685	—	2,283
Reform schools.....	—	1,270	—	—	—	1,270
Indian and Eskimo education.....	—	—	35,391	—	—	35,391
Private schools.....	—	—	—	44,769	11,629	56,398
Totals, Elementary and Secondary.....	738,735	766,836	188,642	49,600	48,637	1,792,450
Teacher-training outside universities.....	—	17,920	—	789	118	18,827
Higher Education—						
Current operating expenditure.....	563	93,048	27,646	62,397	24,437	208,091
Plant expenditure from current funds.....	357	62,381	6,908	—	—	69,646
Research in universities.....	—	1,100	18,640	—	10,885	30,625
Defence colleges.....	—	—	5,761	—	—	5,761
Scholarships.....	—	7,860	6,206	1	5	14,072
Other.....	—	648	217	—	—	965
Totals, Higher Education.....	920	165,037	65,478	62,398	35,327	329,160
Undistributable expenditure.....	—	—	5,672	—	—	5,672
<b>Totals, Formal Education.....</b>	<b>739,655</b>	<b>949,793</b>	<b>259,792</b>	<b>112,787</b>	<b>84,082</b>	<b>2,146,109</b>
<b>Vocational Training—</b>						
Technician training.....	—	6,437	32,454	1,350	36	40,277
Apprenticeship.....	—	2,936	2,643	59	396	6,034
Trade training.....	—	8,508	30,423	603	556	40,090
Technical and vocational teachers.....	—	478	238	—	—	716
Unemployed.....	—	2,633	7,756	1	—	10,390
Handicapped.....	—	874	799	—	—	1,673
Health and welfare personnel.....	—	1,096	—	24	5	1,125
Inmates of reform institutions.....	—	167	350	—	—	517
Indians and Eskimos.....	—	—	146	—	—	146
Other vocational training costs.....	—	5	5,397	—	—	5,402
Provincial capital expenditures.....	—	23,950	2	—	—	23,950
Private business colleges.....	—	—	—	4,381	—	4,381
<b>Totals, Vocational Training.....</b>	<b>—</b>	<b>47,084</b>	<b>80,206</b>	<b>6,418</b>	<b>993</b>	<b>134,701</b>
<b>Cultural Activities—<sup>3</sup></b>						
Adult education, including night schools.....	—	2,353	313	5	10	2,681
Fine arts.....	—	2,606	1,517	68	8	4,199
Handicrafts.....	—	293	—	2	3	298
Libraries <sup>4</sup> .....	17,988	5,021	7,734	—	1,723	25,466
Archives, museums and art galleries.....	—	2,594	5,641	—	6	8,241
National Film Board productions.....	—	—	1,378	—	—	1,378
Cultural societies—grants.....	—	458	294	24	2	778
UNESCO—grant.....	—	—	569	—	—	569
<b>Totals, Cultural Activities.....</b>	<b>17,988</b>	<b>13,325</b>	<b>10,446</b>	<b>99</b>	<b>1,752</b>	<b>43,610</b>

<sup>1</sup> Includes the Yukon and Northwest Territories.

<sup>2</sup> Capital grants from the Federal Government are

included in above items.

<sup>3</sup> Limited to reported expenditures of public funds.

<sup>4</sup> Includes capital costs

from current funds.



## Subsection 1.—Elementary and Secondary Schools

**Control.**—As stated on p. 339, direct control and operation of public schools is by school boards, which operate under school laws and regulations. School boards may be boards of larger units, local boards within larger units or independent boards for rural schools, towns or cities, the members of which may be all elected, partly elected and partly appointed or all appointed; some schools are operated by trustees appointed by the province in lieu of a board. As their designations imply, private schools are administered by private organizations and federal schools by federal authorities.

Table 4 gives the number of active public school boards and school trustees in each province as at January 1966.

## 4.—Active School Boards and School Trustees, by Province, as at January 1966

Province or District	Boards of Larger Units	Local Boards within Larger Units	Independent Local Boards	Total Boards	School Boards Composed of Trustees who are—			School Trustees
					All Elected	Some Appointed Some Elected	All Appointed	
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	269	—	—	269	—	—	269	3,500
Prince Edward Island.....	29	—	378	407	405	2	—	1,437
Nova Scotia.....	24	1,209	42	1,275	1,198	—	77	4,049
New Brunswick.....	14	383	39	436	397	9	30	1,949
Quebec—								
Roman Catholic.....	55	1,291	109	1,455	1,453	—	2	7,457
Protestant.....	9	52	141	202	141	—	61	1,014
Ontario.....	980	11 <sup>1</sup>	716	1,707	1,324	49	334	8,629
Manitoba.....	64	—	1,069	1,133	1,116	—	17	3,930
Saskatchewan.....	60	4,385	76	4,521	4,521	—	—	13,923
Alberta.....	59	—	138	197	197	—	—	880
British Columbia.....	83	—	4	87	87	—	—	557
Mackenzie District.....	—	—	3	3	3	—	—	11
<b>Totals.....</b>	<b>1,646</b>	<b>7,331</b>	<b>2,715</b>	<b>11,692</b>	<b>10,842</b>	<b>60</b>	<b>790</b>	<b>47,336</b>

<sup>1</sup> Boards of Education, all members of Toronto Metropolitan Board.

**Enrolment.**—Table 5 shows enrolment of all elementary and secondary pupils in Canada and in Department of National Defence schools overseas, and classifies them by grade. Private schools and schools for Indian and Eskimo children are included in these figures. Enrolment in private schools accounted for 4 p.c. of the total 1964-65 enrolment at the elementary and secondary levels. Schools operated by Federal Government departments, that is, schools for Indian children, schools in the Territories and overseas schools for children of Service personnel, accounted for about 1 p.c. of the total.

School enrolment has been increasing in recent years much more rapidly than the general population. Annual rates of increase in total school enrolment for the four most recent years ranged from 4.0 p.c. to 4.2 p.c.; the country's population during the same period increased annually by amounts varying from 1.7 p.c. to 1.8 p.c.

**5.—Enrolment in Publicly Controlled, Private and Federal Schools, by Grade,  
School Year 1964-65**

Grade	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec <sup>1</sup>	Ontario
	No.	No.	No.	No.	No.	No.
Kindergarten.....	7,446	54	18,422	89	33,253	121,347
Grade 1.....	15,136	2,933	17,863	17,600	149,051	168,025
Grade 2.....	15,198	2,854	18,438	17,154	146,866	156,179
Grade 3.....	14,765	2,789	18,434	16,766	145,230	149,008
Grade 4.....	14,842	2,753	18,701	16,496	146,969	140,450
Grade 5.....	14,195	2,677	18,055	16,822	140,471	140,415
Grade 6.....	13,733	2,528	17,761	15,557	126,510	134,827
Grade 7.....	13,273	2,478	17,690	15,377	119,114	131,960
Grade 8.....	11,139	2,488	15,710	13,022	123,451	120,355
Grade 9.....	11,355	2,465	14,288	12,586	100,901	121,325
Grade 10.....	7,310	1,808	11,859	10,170	83,961	106,365
Grade 11.....	5,329	1,281	10,149	7,945	62,013	86,954
Grade 12.....	68	949	5,282	6,131	11,352	72,649
Grade 13.....	—	—	—	51	555	36,669
Auxiliary.....	54	61	1,225	345	16,655	23,660
Special.....	323	209	638	490	7,508	15,312
<b>Totals.....</b>	<b>144,166</b>	<b>28,327</b>	<b>204,515</b>	<b>166,601</b>	<b>1,413,860</b>	<b>1,725,510</b>

Grade	Manitoba	Saskatchewan	Alberta	British Columbia	Y.T. and N.W.T. <sup>1</sup>	DND Schools Overseas	Canada
	No.	No.	No.	No.	No.	No.	No.
Kindergarten.....	6,288	3,787	692	12,457	577	838	205,250
Grade 1.....	23,755	24,386	38,220	44,133	1,780	1,102	503,994
Grade 2.....	22,475	23,181	36,937	40,553	1,405	863	482,103
Grade 3.....	21,572	22,409	34,322	39,066	1,245	780	466,386
Grade 4.....	21,560	22,442	35,016	37,911	1,082	660	458,882
Grade 5.....	21,433	22,451	33,512	35,843	858	583	448,315
Grade 6.....	20,268	20,872	31,601	35,358	709	477	420,201
Grade 7.....	20,320	20,500	30,708	33,807	519	451	406,197
Grade 8.....	17,336	18,804	28,015	32,785	479	372	385,356
Grade 9.....	17,785	18,530	26,426	32,026	373	359	358,419
Grade 10.....	15,482	16,837	22,600	28,625	265	319	305,601
Grade 11.....	14,472	14,155	20,786	25,554	198	213	249,049
Grade 12.....	10,231	12,742	22,086	21,358	138	178	163,164
Grade 13.....	—	—	—	3,764	11	87	41,137
Auxiliary.....	1,538	1,435	—	6,034	16	—	51,023
Special.....	—	473	113	73	217	—	25,356
<b>Totals.....</b>	<b>236,174<sup>2</sup></b>	<b>243,004</b>	<b>361,034</b>	<b>431,347</b>	<b>9,872<sup>2</sup></b>	<b>7,282</b>	<b>4,971,692<sup>3</sup></b>

<sup>1</sup> Includes Ungava District of Quebec.  
1,259 pupils not classified by grade.

<sup>2</sup> Total for Yukon Territory was 3,142 pupils.

<sup>3</sup> Includes

**Teaching Staffs.**—Between the school years ended in 1945 and 1965 the number of teachers in the publicly controlled schools of the ten provinces increased 150 p.c. from 75,892 to 189,705. The number of men teachers increased 313 p.c. and the number of women teachers 108 p.c.

In 1965, in nine provinces (excluding Quebec), 85.1 p.c. of the teachers had at least senior matriculation and one year of teacher-training, and an additional 7.8 p.c. had one year less schooling. Median experience in the eight provinces outside of Quebec and Ontario has increased slowly from 7.0 years in 1945 to 8.1 years in 1965, despite the large number of new teachers each year. Many of these have been recruited by the cities, where the median experience has declined from a high of 16.7 years in 1946 to 11.9 years in 1955 and 8.6 years in 1965.

Between 1945 and 1965 the median salary for all teachers in the nine provinces other than Quebec increased 310 p.c. from \$1,207 to \$4,954. That for teachers in one-room schools increased 234 p.c. from \$1,019 to \$3,402. Naturally, the rate of increase from one year to the next has fluctuated considerably, ranging from 16.8 p.c. between 1947 and 1948 to 2.4 p.c. between 1962 and 1963. The increase between 1964 and 1965 was 4.9 p.c. as compared with 4.4 p.c. between 1963 and 1964.

6.—Teachers and Principals in Publicly Controlled Elementary and Secondary Schools, School Year 1964-65

Province and Sex	Number	Median Salary	Median Experience	Fully Qualified <sup>1</sup>	University Graduates
TEACHING ELEMENTARY GRADES <sup>2</sup>					
		\$	yrs.	p.c.	p.c.
Newfoundland.....M.	1,233	2,575	2.7	25.4	8.5
F.	2,987	2,602	3.5	15.2	3.2
Prince Edward Island.....M.	101	3,061	3.8	55.4	12.9
F.	794	2,704	8.7	20.3	1.0
Nova Scotia.....M.	548	3,875	4.9	88.5	32.5
F.	4,758	3,430	11.3	69.5	11.4
New Brunswick.....M.	435	3,535	3.8	67.1	26.0
F.	4,039	2,966	8.9	42.6	3.7
Quebec.....	..	..	..	..	..
Ontario.....M.	11,313	5,264	5.6	95.7	22.7
F.	31,762	4,457	6.9	89.7	6.3
Manitoba.....M.	1,487	3,889	5.1	88.1	14.4
F.	4,546	3,803	7.5	84.2	6.5
Saskatchewan.....M.	1,696	4,616	5.3	98.2	14.9
F.	5,252	4,363	7.9	97.5	36.7
Alberta.....M.	1,732	5,591	6.5	94.5	41.1
F.	7,219	4,838	10.0	89.7	10.8
British Columbia.....M.	2,256	5,794	7.6	96.0	36.4
F.	6,136	5,117	7.2	92.3	12.6
TEACHING SECONDARY GRADES <sup>3</sup>					
		\$	yrs.	p.c.	p.c.
Newfoundland.....M.	777	4,423	5.7	50.3	49.3
F.	354	4,014	10.1	34.7	35.9
Prince Edward Island.....M.	127	4,275	4.2	59.1	53.5
F.	144	3,766	10.0	38.9	29.9
Nova Scotia.....M.	1,201	5,518	8.1	81.8	67.3
F.	1,131	4,888	11.7	65.2	55.7
New Brunswick.....M.	1,151	5,226	6.7	59.9	53.0
F.	952	4,432	10.3	43.2	37.1
Quebec.....	..	..	..	..	..
Ontario.....M.	13,010	7,473	5.8	69.1	80.6
F.	6,206	6,567	4.7	71.3	85.2
Manitoba.....M.	1,837	5,766	7.1	69.6	72.1
F.	1,105	5,202	8.2	62.2	64.3
Saskatchewan.....M.	2,046	7,038	11.0	68.1	66.5
F.	1,002	5,839	12.2	47.5	47.2
Alberta.....M.	3,575	7,082	8.5	71.9	73.5
F.	2,176	5,886	10.6	52.8	53.5
British Columbia.....M.	4,287	7,422	10.0	87.1	75.1
F.	2,200	6,507	10.1	73.1	67.2

<sup>1</sup> Fully qualified at the elementary level are teachers with junior matriculation and two or more years, or senior matriculation and one or more years of professional training. At the secondary level they are teachers with junior matriculation and four or more years, or senior matriculation and three or more years of schooling, of which one year was professional training.

<sup>2</sup> Comprises teachers and principals instructing or supervising elementary grades only, and those instructing or supervising both elementary and secondary grades in rural schools with five or fewer classes. Teachers and principals in Ontario are classified as elementary according to the provincial *Report of the Minister, 1964*.

<sup>3</sup> Comprises teachers and principals instructing or supervising secondary grades only, and those instructing or supervising both elementary and secondary grades in urban centres and in rural schools with six or more classes. Teachers and principals in Ontario are classified as secondary according to the provincial *Report of the Minister, 1964*.

**Financial Support.**—Table 7 shows details of the income of public school boards for the years 1961-63. In most provinces, local taxation is the most important source of revenue followed by provincial government grants. In 1963, all other sources of income accounted for 3 p.c. of total current revenue. (See also p. 346.)



Not all provinces collect and publish figures for debenture indebtedness, although it is the usual practice in all provinces, except Newfoundland, for boards to finance new construction, at least in part, by issuing debentures. Provincial aid toward capital expenditures may take the form of a percentage of total cost, a fixed amount per classroom or assistance with debenture debt charges. Many provinces guarantee debentures issued by school boards and others assist in marketing them.

### 7.—Income of School Boards for Publicly Controlled Elementary and Secondary Schools, by Province, Years Ended Mar. 31, 1961-63

NOTE.—The receipts shown in this table do not include any amounts raised by loans or the sale of bonds or debentures as all revenue of this nature must be repaid ultimately with money raised by local taxation. Figures from 1914 are given in the corresponding table of previous Year Books beginning with the 1936 edition.

Province and Year Ended—	Income from—			Total Current Revenue Recorded	Debenture Indebtedness <sup>1</sup>
	Provincial Government Grants	Local Taxation	Other Sources		
	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....1961	15,735	205	2,151	18,091	..
.....1962	16,621	272	2,233	19,126	..
.....1963	18,746	363	2,262	21,371	..
Prince Edward Island.....1961	2,478	1,412	97	3,987	..
.....1962	2,937	1,566	99	4,602	..
.....1963	3,502	2,149	46	5,697	..
Nova Scotia.....1961	16,863	20,960	1,233	39,056	45,350
.....1962	20,365	23,651	702	44,718	50,793
.....1963	21,299	24,740	523	46,562	55,104
New Brunswick.....1961	9,350	19,567	825	29,742	31,736
.....1962	10,330	22,482	321	33,133	25,377
.....1963	11,388	25,015	442	36,845	28,423
Quebec.....1961	114,725	160,235	10,907	285,867	393,250
.....1962	169,277	154,984	15,822	340,083	438,872
.....1963	197,678	190,398	18,195	406,271	485,737
Ontario.....1961	181,546	294,049	13,279	488,874	647,920
.....1962	204,548	316,948	27,486	548,982	682,626
.....1963	233,689	345,371	20,011	599,071	732,917
Manitoba.....1961	25,186	35,974	58	61,218	60,806
.....1962	27,301	38,104	126	65,531	63,292
.....1963	28,527	41,389	44	69,960	71,252
Saskatchewan.....1961	31,285	40,454	1,836	73,575	44,396
.....1962	33,300	43,246	1,483	78,029	49,547
.....1963	37,449	46,156	1,624	85,229	55,750
Alberta.....1961	63,547	52,445	1,332	117,324	124,812
.....1962	75,483	67,779	1,491	144,753	135,376
.....1963	76,068	71,036	1,617	148,721	152,779
British Columbia.....1961	58,934	64,102	2,560	125,596	..
.....1962	62,600	69,092	2,655	134,347	..
.....1963	68,698	77,692	2,720	149,110	..

<sup>1</sup> Net figures, after deduction of sinking funds.

### Subsection 2.—Universities and Colleges

**Institutions.**—An institution of higher education in Canada is generally defined as one that offers one or more years of work beyond the most advanced high-school grade in the province in which it is located, with all or part of the work offered being acceptable for credit toward a university degree or equivalent diploma. The definition thus excludes institutions offering technical and vocational post-high school courses for which credit is not given.

In 1965-66 there were nearly 400 institutions of higher education in Canada, of which about 50 have degree-granting powers (not including about 20 that confer degrees in theology only).

**Enrolment.**—Full-time university-grade enrolment continues to increase year by year and indications are that enrolments may well be double the 1965-66 figure of 205,888 in about six years. Table 8 shows full-time enrolment by province for the academic years ended 1963-66. In addition to full-time students, there were about 74,000 part-time university-grade students (including over 7,700 graduate students) in attendance during the regular 1963-66 winter session and over 6,500 students taking university-grade credit correspondence courses. University-grade summer school enrolment was over 62,000 in 1964 and over 70,000 in 1965.

**8.—Full-Time Regular Winter Session University-Grade Enrolment, by Province, Academic Years Ended 1963-66**

Province	1962-63		1963-64		1964-65		1965-66	
	Total	Graduate Only	Total	Graduate Only	Total	Graduate Only	Total	Graduate Only
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	1,998	34	2,244	47	2,652	51	3,168	62
Prince Edward Island.....	705	—	738	—	802	—	924	—
Nova Scotia.....	7,034	242	7,722	269	8,509	400	9,457	460
New Brunswick.....	4,896	181	5,153	199	5,773	305	6,371	383
Quebec.....	47,324	2,813	53,605	3,868	59,400	4,641	67,316	5,810
Ontario.....	39,269	3,328	44,191	4,201	50,793	5,424	58,983	6,859
Manitoba.....	7,741	296	8,802	564	9,172	531	11,069	600
Saskatchewan.....	7,024	253	7,811	315	9,603	337	10,707	407
Alberta.....	9,837	656	11,079	825	12,977	1,048	14,749	1,304
British Columbia.....	15,560	633	17,043	845	18,557	1,060	23,144	1,311
<b>Totals.....</b>	<b>141,388</b>	<b>8,436</b>	<b>158,388</b>	<b>11,133</b>	<b>178,238</b>	<b>13,797</b>	<b>205,888</b>	<b>17,196</b>

Foreign enrolment has risen considerably during the past decade, with a larger proportion of students from countries other than the United States and Britain coming to Canadian institutions, as shown in Table 9. In 1965-66 about one of every 18 full-time university students in Canada was a resident of a country other than Canada. The United States, Hong Kong, Trinidad and Tobago, India and Britain each accounted for over 500 students, and France, Pakistan, Malaysia, Viet-Nam, Nigeria, Jamaica, the Republic of China, Japan, Germany, Guyana and Haiti contributed from 100 to 400 each. About 150 other countries or territories were represented in the figures.

**9.—Students from Other Countries in Canadian Universities, and Canadian Students in Universities in the United States and Britain, Selected Academic Years Ended 1931-66**

Academic Year Ended—	Total Full-Time University Enrolment in Canada	Students with Residence in—					Enrolment from Other Countries in Canada		Canadians Studying in—	
		United States	Britain	British West Indies	Newfoundland <sup>1</sup>	Other Countries	From all Countries	From British Commonwealth Only	United States <sup>2</sup>	Britain <sup>3</sup>
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1931.....	32,926	1,506	333	54	175	236	2,304	..	1,313	212
1941.....	36,319	1,478	41	74	174	289	2,056	..	1,458	..
1951.....	68,306	1,758	164	252	...	1,014	3,188	..	4,528	372
1961.....	113,864	2,362	582	1,210	...	3,097	7,251	3,294	6,058	502
1962.....	128,894	2,660	577	1,251	...	3,412	7,900	3,552	6,571	559
1963.....	141,388	2,845	650	1,153	...	3,870	8,518	3,763	7,004	657
1964.....	158,388	3,193	687	1,214	...	4,396	9,490	4,202	8,458	652
1965 <sup>4</sup> .....	178,238	3,124	715	1,288	...	4,874	10,011	4,452	9,253	657
1966 <sup>4</sup> .....	205,888	3,395	893	1,064	...	5,960	11,312	5,036	...	...

<sup>1</sup> Before 1949, Newfoundland was considered as being a country outside Canada.

<sup>2</sup> Data from the Institute of International Education, New York.

<sup>3</sup> Data from the Association of Commonwealth Universities, London, England. Newfoundland is included with Canada for all years.

**Graduates.**—Table 10 gives figures for graduates in most faculties for the academic years ended 1963-65. A total of 33,497 bachelor and first professional degrees and equivalent diplomas were granted in 1964-65. Included in the total were 10,416 women.

### 10.—Graduates from Universities and Colleges, Academic Years Ended 1963-65

NOTE.—Figures for 1920-36 are given in the 1938 Year Book, pp. 993-997, and for 1937-62 in the corresponding table of subsequent editions.

Field of Study	1962-63		1963-64		1964-65	
	Total	Female	Total	Female	Total	Female
	No.	No.	No.	No.	No.	No.
<b>Graduates in Arts, Pure Science and Commerce.</b>	<b>13,955</b>	<b>3,959</b>	<b>16,517</b>	<b>4,784</b>	<b>18,984</b>	<b>5,727</b>
Bachelors of Arts <sup>1</sup> .....	10,532	3,560	12,438	4,308	14,246	5,168
Bachelors of Science (in Arts) <sup>2</sup> .....	2,237	352	2,684	411	3,111	506
Bachelors of Commerce <sup>3</sup> .....	1,186	47	1,395	65	1,627	53
<b>Graduates in Applied Science</b> .....	<b>2,435</b>	<b>5</b>	<b>2,643</b>	<b>7</b>	<b>2,488</b>	<b>10</b>
Bachelors of Applied Science in Engineering.....	2,246	2	2,422	7	2,256	6
Bachelors of Architecture <sup>4</sup> .....	96	3	113	—	118	3
Bachelors of Forestry.....	88	—	105	—	114	1
Bachelors of Fisheries.....	5	—	3	—	—	—
<b>Graduates in Agriculture, Veterinary Science and Household Science</b> .....	<b>763</b>	<b>336</b>	<b>799</b>	<b>340</b>	<b>838</b>	<b>344</b>
Bachelors of Agricultural Science.....	557	13	392	12	436	21
First degrees in Veterinary Science.....	85	2	83	6	81	4
Bachelors of Household Science.....	321	321	324	322	321	319
<b>Graduates in Education, Library Science and Social Service</b> .....	<b>4,369</b>	<b>1,845</b>	<b>5,117</b>	<b>2,151</b>	<b>6,434</b>	<b>2,940</b>
First degrees in education or pedagogy.....	3,495	1,379	3,998	1,572	5,204	2,318
Librarian degrees and diplomas.....	265	195	348	256	385	297
Physical education first degrees and diplomas.....	337	104	472	144	495	121
Social service degrees and diplomas.....	272	167	299	179	350	204
<b>Graduates in Medicine and Related Studies</b> .....	<b>1,989</b>	<b>709</b>	<b>2,111</b>	<b>835</b>	<b>2,580</b>	<b>1,042</b>
Medical doctors.....	826	65	773	71	1,034 <sup>5</sup>	94 <sup>5</sup>
Dentists.....	259	5	258	14	286	9
Pharmacists.....	292	75	366	91	375	125
First degrees in nursing.....	386	386	407	407	563	560
Physiotherapy and occupational therapy.....	173	173	249	247	249	247
Chiropractic.....	19	3	26	4	23	4
Optometry.....	33	2	32	1	50	3
<b>Graduates in Law and Theology</b> .....	<b>1,457</b>	<b>67</b>	<b>1,602</b>	<b>70</b>	<b>1,684</b>	<b>76</b>
First degrees and equivalent diplomas in law.....	588	24	701	32	767	38
Roman Catholic theological colleges.....	545	—	560	—	575	—
Protestant theological colleges <sup>6</sup> .....	324	43	341	38	342	38
<b>Other First Degrees and Equivalent Diplomas</b> .....	<b>253</b>	<b>132</b>	<b>295</b>	<b>151</b>	<b>489</b>	<b>277</b>
Bachelors of Fine and Applied Arts.....	13	8	21	11	21	14
Bachelors of Interior Design.....	24	11	24	21	21	17
Journalism.....	33	15	32	16	33	21
Bachelors of Music.....	77	51	90	64	128	94
Others.....	106	47	128	69	286	131
<b>Graduate and Honorary Degrees</b> .....	<b>3,827</b>	<b>698</b>	<b>4,215</b>	<b>722</b>	<b>4,922</b>	<b>905</b>
Honorary doctorates.....	254	7	244	13	258	15
Doctorates in course.....	421	34	481	38	569	55
Masters of Arts <sup>7</sup> .....	1,705	402	1,947	464	2,242	546
Masters of Science <sup>8</sup> .....	843	72	980	62	1,172	103
Licences (except Theology) <sup>9</sup> .....	604	183	563	145	681	186

<sup>1</sup> Includes Bachelors of Letters and Social Science.

<sup>2</sup> Includes Bachelors of Accounting and Secretarial Science.

<sup>3</sup> Includes Bachelors of Accounting and Secretarial Science.

<sup>4</sup> Includes diplomas in Architecture from the School of Architecture of Montreal.

<sup>5</sup> Prior to 1964-65, l'Université de Montréal and l'Université Laval granted the M.D. degree only after the intern year. In 1964-65 they began to grant it before the intern year, and for that year both institutions had two graduating classes.

<sup>6</sup> Includes all diplomas and degrees except for Bachelors of Divinity.

<sup>7</sup> Includes M. Com., M.Ed., M.Paed., M.S.W., as well as M.A. In some institutions, M.Sc. degrees are included with M.A.s.

<sup>8</sup> Includes M.A.Sc., M.S.A., M.Sc.F., M. Arch., M.V.Sc., M.Sc. Dent., M. Surgery (where conferred separately) as well as M.Sc.

<sup>9</sup> The "Licence" in the French-language universities is the next degree in advance of the Bachelor.



**Teaching Staffs.**—Table 11 shows the trend in university teaching staffs since 1957.

### 11.—Full-Time Teaching Complement in Universities and Colleges, Academic Years Ended 1957-66

NOTE.—Figures are estimates based on returns from institutions representing about 50 p.c. of the total enrolment and include some research personnel and junior and sessional lecturers and assistants.

Academic Year Ended—	Teachers	Academic Year Ended—	Teachers
	No.		No.
1957.....	7,000	1962.....	10,540
1958.....	7,500	1963.....	11,670
1959.....	8,200	1964.....	12,940
1960.....	9,200	1965.....	14,300
1961.....	9,755	1966.....	15,900

Table 12 gives median salaries, by rank and region, for the staffs of 17 major institutions for 1965-66.

### 12.—Median Salaries of Teachers at 17 Universities, Academic Year 1965-66

NOTE.—Institutions include: *West*—Universities of Manitoba, Saskatchewan, Alberta (Edmonton and Calgary), British Columbia; *Central*—Bishop's, McGill, Queen's, Toronto, Victoria, Trinity, McMaster, Western Ontario; *Atlantic*—Acadia, Dalhousie, St. Francis Xavier, Mount Allison, New Brunswick.

Rank	Region				Staff Complement
	Atlantic Provinces	Central Provinces	Western Provinces	Total	
	\$	\$	\$	\$	No.
Deans.....	15,000	19,150	19,036	18,556	134
Professors.....	12,531	15,102	15,210	14,981	1,476
Associate professors.....	9,779	11,050	11,995	11,435	1,851
Assistant professors.....	8,050	8,715	9,345	8,957	2,367
Instructors and lecturers.....	6,449	7,079	7,423	7,157	1,210
<b>Totals, All Ranks.....</b>	<b>8,902</b>	<b>10,283</b>	<b>10,585</b>	<b>10,250</b>	<b>7,071<sup>1</sup></b>

<sup>1</sup> Includes 36 ungraded professors not distributed above.

**Finances.**—Table 13 gives a ten-year series of the finances of Canadian universities. Since 1954 they have received more than one half of their revenue from government grants and a very small amount from municipal councils. Beginning with the academic year 1951-52, the Federal Government has provided university grants to help meet current operating costs. These grants were originally paid on the basis of 50 cents per head of population in each province and the eligible institutions received their share of the provincial allotment according to the number of full-time students in undergraduate and graduate courses. The rate of grant was increased to \$1.00 per capita in 1956-57, to \$1.50 in 1958-59 and to \$2.00 in 1962-63. The Province of Quebec did not accept this grant for the years up to 1955-56. From 1956-57 to 1959-60 the payments refused by Quebec were held in trust by the Canadian Universities Foundation (now the Association of Universities and Colleges of Canada), which administers the fund. In 1960-61 the Quebec Government and the Federal Government negotiated a new tax-sharing agreement under which Quebec provides its own grants and is reimbursed by an abatement of corporation tax. Table 14 gives details of the federal grants for each of the academic years ended 1964-66.

The Federal Government also provides assistance to universities through the University Capital Grants Fund which is administered by the Canada Council. The original amount in the fund was \$50,000,000 (interest and profits to Mar. 31, 1966 increased it to over \$67,000,000), to be granted in amounts not exceeding 50 p.c. of specific building or capital equipment projects, having regard to the population of each province. Up to the end of March 1966, a total of almost \$58,000,000 had been authorized. Grants are paid in four equal instalments spread over the period of construction so that there is a time lag between approval and payment.

The Canada Council was also endowed with an additional \$50,000,000 (raised by \$10,000,000 Apr. 3, 1965), the interest on which is available for the provision of scholarships or other assistance in the fields of the arts, humanities and social sciences (see p. 376).

### 13.—Current Income and Expenditure of Universities and Colleges, Academic Years Ended 1956-65

Academic Year Ended—	Current Income					Total Current Expenditure
	Endowments and Investments	Government Grants	Student Fees <sup>1</sup>	Miscellaneous	Total <sup>1</sup>	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1956.....	4,692	45,107	21,600	8,938	80,337	80,427
1957.....	5,014	49,911	25,105	10,733	90,763	86,521
1958.....	4,375	57,118	30,867	10,304	102,664	102,991
1959.....	4,668	70,843	33,546	11,373	120,430	121,113
1960.....	5,082	82,515	40,789	14,132	142,518	143,311
1961.....	5,332	110,183	45,991	14,396	175,902	175,970
1962 <sup>2</sup> .....	7,834	121,461	56,249	25,062 <sup>r</sup>	210,606 <sup>r</sup>	211,330
1963 <sup>2</sup> .....	8,191	142,606	62,397	27,107	240,301	244,015
1964.....	10,208	168,626	75,573	28,785	283,202	289,931
1965.....	7,986	200,412	89,738	44,632	342,768	345,222

<sup>1</sup> Board and lodging not included.

<sup>2</sup> Includes the Canadian Services Colleges.

### 14.—Federal Government University Grants, by Province, Academic Years Ended 1964-66

Province and Academic Year Ended—	Institutions	Eligible Enrolment		Total Grants	Grant per Eligible Student
		No.	No.		
		No.	\$	\$	\$
Newfoundland.....	1964.....	1	2,244	962,000	428.70
	1965.....	1	2,652	982,000	370.29
	1966.....	1	3,168	996,000	314.39
Prince Edward Island.....	1964.....	2	734	214,000	291.55
	1965.....	2	802	214,000	266.83
	1966.....	2	924	216,000	233.77
Nova Scotia.....	1964.....	13	7,505	1,512,000	201.47
	1965.....	13	8,297	1,520,000	183.20
	1966.....	13	9,283	1,522,000	163.96
New Brunswick.....	1964.....	4	5,143	1,228,000	238.77
	1965.....	4	5,759	1,234,000	214.27
	1966.....	4	6,344	1,246,000	196.41
Quebec <sup>1</sup> .....	...	...	...	...	...
Ontario.....	1964.....	31	39,964	12,896,000	322.69
	1965.....	33	46,778	13,172,000	281.59
	1966.....	34	54,912	13,462,000	245.16
Manitoba.....	1964.....	8	8,516	1,900,000	223.11
	1965.....	8	8,892	1,916,000	215.47
	1966.....	8	10,756	1,924,000	178.88
Saskatchewan.....	1964.....	14	7,652	1,866,000	243.86
	1965.....	13	9,456	1,886,000	199.45
	1966.....	11	10,563	1,902,000	180.06
Alberta.....	1964.....	6	10,446	2,810,000	269.00
	1965.....	7	12,517	2,864,000	228.81
	1966.....	7	14,282	2,902,000	203.19
British Columbia.....	1964.....	5	16,516	3,390,000	205.26
	1965.....	5	17,958	3,476,000	193.56
	1966.....	6	21,645	3,578,000	165.30
<b>Totals<sup>1</sup></b> .....	1964.....	84	98,720	26,778,000	271.25
	1965.....	86	113,111	27,264,000	241.04
	1966.....	86	131,877	27,748,000	210.41

<sup>1</sup> See text on p. 361 *re* Quebec.

## Subsection 3.—Vocational Education

Table 15 summarizes the data on full-time vocational training classes. The duration of these classes may vary from three weeks taken annually by indentured apprentices at provincially operated trade schools, to three-year vocational high school courses or post-secondary courses offered in provincial institutes of technology. Numerous skills are taught, ranging from short courses in welding or typing to extended courses for instrument technicians or aircraft maintenance men. Students taking two-year or three-year vocational courses in public secondary schools may, upon completion, enter employment or may continue other formal training in a trade school or an institute of technology.

In addition to the full-time vocational courses, a great variety of part-time instruction is offered by both public and private institutions as an alternative to full-time training or as an attraction to the individual interested in a hobby.

## 15.—Full-Time Enrolment in Vocational Courses, School Year 1963-64

Course	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	No.	No.	No.	No.	No.	No.
Publicly Sponsored— <sup>1</sup>						
Vocational high school courses....	366	491	1,636	7,696	21,473	132,175
Post-secondary technical courses..	42	—	76	207	6,977 <sup>2</sup>	4,743
Apprenticeship courses.....	278	84	592	268		3,650
Trade and other occupational courses <sup>3</sup> .....	1,584	12	401	1,482	20,683	1,062
Training in co-operation with industry <sup>3</sup> .....	—	—	246	378	3,319	835
Training of the unemployed <sup>3</sup> .....	731	334	1,004	2,930	9,429	25,176
Training of the disabled <sup>3</sup> .....	121	10	240	193	435	1,100
Training of technical and vocational teachers <sup>3</sup> .....	—	—	—	99 <sup>4</sup>	325	228
Training for federal departments and agencies <sup>3</sup> .....	114	—	509	—	394	226
Privately Sponsored—						
Trade school courses.....	—	—	110	81	8,595	3,732
Business school courses.....	—	502	—	575	8,618	5,757
<b>Totals.....</b>	<b>3,236</b>	<b>6,247</b>		<b>13,909</b>	<b>80,243</b>	<b>178,684</b>
	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.
Publicly Sponsored— <sup>1</sup>						
Vocational high school courses....	4,801	9,014	11,471	12,412	—	201,535
Post-secondary technical courses..	294	316	1,687	150	—	14,492 <sup>2</sup>
Apprenticeship courses.....	868	925	4,565	1,831	—	13,061 <sup>5</sup>
Trade and other occupational courses <sup>3</sup> .....	575	1,490	2,588	4,566	150	34,593
Training in co-operation with industry <sup>3</sup> .....	34	198	1,744	1,060	—	7,814
Training of the unemployed <sup>3</sup> .....	3,103	1,465	1,779	2,844	128	48,923
Training of the disabled <sup>3</sup> .....	472	177	28	87	—	2,863
Training of technical and vocational teachers <sup>3</sup> .....	8	—	60	19	10	749
Training for federal departments and agencies <sup>3</sup> .....	—	—	—	—	—	1,243
Privately Sponsored—						
Trade school courses.....	931	392	1,256	859	—	15,956 <sup>6</sup>
Business school courses.....	1,386	1,248	1,624	2,504	—	22,214 <sup>7</sup>
<b>Totals.....</b>	<b>12,472</b>	<b>15,225</b>	<b>26,802</b>	<b>26,332</b>	<b>288</b>	<b>363,443</b>

<sup>1</sup> Enrolments of full-time students under the various programs of the federal-provincial agreements (see p. 347).

<sup>2</sup> Excludes 2,473 full-time students in one-year preparatory courses at institutes of technology.

<sup>3</sup> As at Mar.

31, 1964.

<sup>4</sup> Includes students from other Atlantic Provinces.

<sup>5</sup> Excludes 5,116 part-time students and

149 students taking formal apprenticeship courses by correspondence.

<sup>6</sup> Excludes 17,048 part-time students

and students taking correspondence courses from private trade schools and business schools.

<sup>7</sup> Excludes

21,000 part-time students and about 3,100 students taking correspondence courses.



### Subsection 4.—Adult Education

Adult education benefits from a wide variety of sponsors, both public and private, but most important in this respect are government departments and agencies at all three levels. Although the Federal Government makes substantial contributions, provincial departments of education, of course, play the major role since education is a provincial responsibility. Other provincial departments, such as the departments of health and of agriculture, are also active in promoting education for adults.

Government-sponsored classes comprised 79 p.c. of the total adult education enrolment of 3,229,100 in 1964-65. Compared with the previous year, there was a marked increase of enrolment in agriculture but a decrease in elementary academic education. Government-sponsored lectures, film showings, exhibits, etc., claimed over 35 p.c. of the total attendance. Of the total enrolment, 7.8 p.c. was reported by 73 universities and colleges. Other sponsors were public libraries, museums and art galleries, teacher-training institutions, private trade and business schools and voluntary organizations. These institutions were responsible for a large part of the increase in enrolment.

### 16.—Adult Education Activities, School Year 1963-64

Province or Territory and Sponsor	Part-Time Enrolment in—			Total Enrolment	Attendance at Public Lectures, etc.
	Academic Subjects	Vocational and Professional Training	Informal Courses		
	No.	No.	No.	No.	No.
Newfoundland—					
Universities.....	814	204	1,068	2,086	7,650
Government!.....	1,763	1,752	—	3,515	—
Prince Edward Island—					
Universities.....	411	485	—	896	—
Government!.....	248	634	708	1,590	9,586
Nova Scotia—					
Universities.....	2,716	5,224	1,817	9,757	33,312
Government!.....	3,771	14,846	2,681	21,298	13,600
New Brunswick—					
Universities.....	3,108	106	1,003	4,217	11,850
Government!.....	4,650	9,869	7,610	22,129	19,300
Quebec—					
Universities.....	32,297	21,103	14,120	67,520	122,054
Government!.....	31,815	288,836	58,325	378,976	396,268
Ontario—					
Universities.....	30,105	19,992	26,883	76,980	80,270
Government!.....	43,990	85,197	67,588	196,775	150,550
Manitoba—					
Universities.....	4,895	1,654	3,488	10,037	49,783
Government!.....	6,495	183,907	23,171	213,573	782,259
Saskatchewan—					
Universities.....	7,703	10,674	3,724	22,111	2,790
Government!.....	11,307	257,113	5,868	274,288	4,254
Alberta—					
Universities.....	6,750	13,330	20,157	40,237	75,400
Government!.....	9,028	117,747	27,067	153,842	1,200
British Columbia—					
Universities.....	9,099	9,004	11,467	29,570	208,000
Government!.....	23,996	24,548	45,740	94,284	202,664
Yukon Territory.....	15	76	91	182	—
Federal Government.....	25,776	104,542	4,041	134,359	672,410
Public libraries.....	—	—	5,115	5,115	581,866
Business colleges.....	—	22,465	—	22,465	—
Teacher-training institutions.....	—	40,669	—	40,669	—
Trade schools.....	—	40,835	—	40,835	—
Training in industry.....	—	61,080	—	61,080	—
Museums and art galleries.....	—	—	5,974	5,974	854,813
Wheat pools.....	—	12,078	—	12,078	—
<b>Totals, 1963-64<sup>1</sup>.....</b>	<b>260,252</b>	<b>1,338,220</b>	<b>337,716</b>	<b>1,936,188</b>	<b>4,279,879</b>
<b>Totals, 1962-63<sup>2</sup>.....</b>	<b>201,686</b>	<b>582,673</b>	<b>292,826</b>	<b>1,077,185</b>	<b>3,972,002</b>

<sup>1</sup> Operated and assisted by federal and provincial departments and agencies.

<sup>2</sup> Excludes duplicated en-

## PART II.—CULTURAL ACTIVITIES RELATED TO EDUCATION

## Section 1.—The Arts and Education

**Fine Art Schools, Galleries and Organizations.\***—Fine art (architecture, painting and drawing, commercial and decorative arts, graphics, ceramics and sculpture) appears as an elective subject of the faculty of arts in a number of universities, where it may be taken as one of five, six or more subjects for a year or two. Five universities offer a Bachelor of Fine Arts degree:—

University of Alberta, Edmonton, Alta.  
 University of Manitoba, Winnipeg, Man.  
 Mount Allison University, Sackville, N.B.  
 Sir George Williams University, Montreal, Que.  
 University of Victoria, Victoria, B.C.

Ten universities offer a Bachelor of Arts degree with a major in fine art:—

University of British Columbia, Vancouver, B.C.  
 University of Calgary, Calgary, Alta.  
 University of Guelph, Guelph, Ont.  
 McGill University, Montreal, Que.  
 McMaster University, Hamilton, Ont.  
 Queen's University, Kingston, Ont.  
 University of Saskatchewan, Saskatoon and Regina, Sask.  
 Sir George Williams University, Montreal, Que.  
 University of Toronto, Toronto, Ont.  
 University of Windsor, Windsor, Ont.

There are many schools of art with varying academic requirements for admission. These offer diploma or certificate courses and are concerned largely with the technical development of the artist. Among those widely known are:—

Nova Scotia College of Art, Halifax, N.S.  
 École des Beaux-Arts, Quebec, Que.  
 École des Beaux-Arts, Montreal, Que.  
 School of Art and Design, Montreal Museum of Fine Arts, Montreal, Que.  
 Ontario College of Art, Toronto, Ont.  
 University of Manitoba School of Fine Arts, Winnipeg, Man.  
 School of Art, Regina Campus, University of Saskatchewan, Regina, Sask.  
 Alberta College of Art, Calgary, Alta.  
 Institut des Arts Appliqués, Montreal, Que.  
 Vancouver School of Art, Vancouver, B.C.  
 Kootenay School of Art, Nelson, B.C.  
 University of Victoria, Victoria, B.C.

Courses in these schools vary in length with the requirements of the individual student but may extend over as many as four years. In some of these schools fine crafts as well as fine arts are taught. Summer schools of art are sponsored by some of the foregoing institutions, by universities and by various independent groups. One of the more important summer schools is the Banff School of Fine Arts, affiliated with the University of Calgary. Two booklets published by the Canadian Cultural Information Centre provide details on courses in the fine arts—*Facilities for Study in the Arts in Canada* and *Some Summer Courses in the Arts in Canada*.\*

Public art galleries in the principal cities perform valuable educational services among adults and children. Children's Saturday classes, conducted tours for school pupils and adults, radio talks, lectures and concerts are features of the programs of the various galleries. Many of these institutions supply their surrounding areas with travelling exhibitions and some range even farther afield. Several organizations such as the Maritime Art Association, the Atlantic Provinces Art Circuit, the Western Canada Art Circuit, the Art Institute of

\* Further information on this subject may be obtained from the Canadian Cultural Information Centre, 56 Sparks St., Ottawa.

Ontario and the Queen's Art Circuit have been founded to carry out this sort of travelling program on a regional basis. The National Gallery of Canada conducts a nation-wide program of this nature and is the third largest circulating agency in North America. Several galleries maintain an art-lending or rental service.

Among the principal public art galleries are:—

Beaverbrook Art Gallery, Fredericton, N.B.  
 Montreal Museum of Fine Arts, Montreal, Que.  
 National Gallery of Canada, Ottawa, Ont.  
 Public Library and Art Museum, London, Ont.  
 Art Gallery of Ontario, Toronto, Ont.  
 Art Gallery of Hamilton, Hamilton, Ont.  
 Willistead Art Gallery, Windsor, Ont.  
 Winnipeg Art Gallery, Winnipeg, Man.  
 Kitchener-Waterloo Art Gallery, Kitchener, Ont.  
 Mendel Art Gallery, Saskatoon, Sask.  
 Edmonton Art Gallery, Edmonton, Alta.  
 Vancouver Art Gallery, Vancouver, B.C.  
 Art Gallery of Greater Victoria, Victoria, B.C.  
 Fathers of Confederation Art Gallery and Museum, Charlottetown, P.E.I.

Other important collections of art are housed in arts councils and university galleries. Among university galleries are:—

Fine Arts Gallery of the University of British Columbia, Vancouver, B.C.  
 University of Alberta, Edmonton, Alta.  
 University of Calgary, Calgary, Alta.  
 Norman Mackenzie Art Gallery of the University of Saskatchewan, Regina, Sask.  
 Agnes Etherington Art Centre, Queen's University, Kingston, Ont.  
 McIntosh Memorial Art Gallery, University of Western Ontario, London, Ont.  
 Hart House, and Sigmund Samuel Canadiana Gallery of the University of Toronto, Toronto, Ont.  
 Owens Museum of Fine Arts, Mount Allison University, Sackville, N.B.  
 St. John's Memorial University Art Gallery, St. John's, Nfld.  
 Creative Art Centre of the University of New Brunswick, Fredericton, N.B.  
 Sir George Williams University Art Gallery, Montreal, Que.  
 Dalhousie University Art Gallery, Halifax, N.S.

Three of the more important galleries connected with arts councils are the St. Catharines and District Arts Council, St. Catharines, Ont., the Glenhyrst Arts Council, Brantford, Ont., and the Art Gallery of the Calgary Allied Arts Centre, Calgary, Alta.

**Other Fine Art Organizations.**—Among the leading art organizations of national scope, exclusive of museums and art galleries, are:—

Association of Canadian Industrial Designers  
 National Design Council  
 Canadian Conference of the Arts  
 Canadian Craftsmens Association  
 Canadian Society for Education through Art  
 Canadian Group of Painters  
 Canadian Guild of Potters  
 Canadian Handicrafts Guild  
 Canadian Museums Association  
 Canadian Society of Graphic Art  
 Canadian Society of Painter-Etchers and Engravers  
 Canadian Society of Painters in Water Colour  
 Canadian Society of Landscape Architects  
 Federation of Canadian Woodcarvers  
 Royal Canadian Academy of Arts  
 Royal Architectural Institute of Canada  
 Sculptors' Society of Canada  
 Town Planning Institute of Canada  
 Canadian Centre for Films on Art  
 Community Planning Association of Canada.



Young members of the Saturday morning class at the Art Gallery of Ontario preparing background panels for a Christmas exhibit of Canadian-designed toys.



**The National Gallery of Canada.**—The beginnings of the National Gallery of Canada are associated with the founding of the Royal Canadian Academy of Arts in 1880. The Marquis of Lorne, then Governor General, had recommended and assisted the founding of the Academy and among the tasks he assigned to that institution was the establishment of a National Gallery at the seat of government. Until 1907 the National Gallery was under the direct control of a Minister of the Crown but in that year, in response to public demand, an Advisory Arts Council consisting of three laymen was appointed by the government to administer grants to the National Gallery. Three years later, the first professional curator was appointed.

In 1913, the National Gallery was incorporated by Act of Parliament (RSC 1952, c. 186) and was placed under the administration of a Board of Trustees appointed by the Governor General in Council; its function was to encourage public interest in the arts and to promote the interests of art throughout the country. Under this management, the Gallery increased its collections and developed into an art institution worthy of international recognition. Today, the Gallery administration comes under the aegis of the Secretary of State. The Board of Trustees, now composed of nine members representing all sections of Canada, meets twice annually. In 1960, the Gallery entered a new era in its history when the entire national collection and the staff and equipment necessary to its maintenance were transferred to new modern quarters—the Lorne Building in downtown Ottawa—which provides adequate well-lighted space for hanging the permanent collection and for displaying travelling exhibitions.

The Gallery's collections are of indisputable taste and quality. They have been built up along international lines and give the people of Canada an indication of the origins from which their own tradition is developing. The collection of Canadian art, the most extensive and important in existence, is continually being augmented by the purchase of works from the Biennials of Canadian Art and other sources. The collections include many Old Masters, among which are twelve acquired from the famous Liechtenstein collection; extensive war collections; the Massey collection presented to the Gallery during 1946-50 by the Massey Foundation; a collection of French paintings; prints and drawings; and diploma works of the Royal Canadian Academy. The prints and drawings collection consists of more than 5,000 items. The services of the Gallery include the operation of a reference library open to the public which contains more than 10,000 volumes and periodicals on the history of art and other related subjects.

The National Conservation Research Laboratory, established in 1964, provides technical information on works of art from public and private collections across Canada

and is responsible for the conservation of the national art collections. In addition, studies are carried out on the effects of environment on works of art and on the durability of artists' materials.

An active program of exhibitions, lectures, films and guided tours is maintained for visitors to the Gallery in Ottawa. The interests of the country as a whole are served by circulating exhibitions, lecture tours, publications, reproductions and filmstrips prepared by the National Gallery staff. The distribution of films is handled by the Canadian Centre for Films on Art. The Gallery promotes interest in Canadian art abroad by participating in international exhibitions such as the Biennials of Venice, São Paulo and Paris, and by preparing major exhibitions of Canadian art for showing in other countries. At the same time it brings important exhibitions from abroad for circulation in Canada.

**Performing Arts Schools.**—Music, the most widespread of the performing arts (which also include opera, drama, ballet and dance), is a degree course in a number of universities. The following offer degree courses:—

- Acadia University, Wolfville, N.S.—B.A. with music major, and Mus. B.
- University of Alberta, Edmonton, Alta.—B.A. major and Mus. B.
- Brandon College, Brandon, Man.—B. Mus. (Education)
- University of British Columbia, Vancouver, B.C.—B.A. major and B. Mus.
- University of Calgary, Calgary, Alta.—B. Mus.
- Laval University, Quebec, Que.—B. Mus.
- University of Manitoba, Winnipeg, Man.—B.A. major and B. Mus.
- University of Montreal, Montreal, Que.—B. Mus. and D. Mus.
- McGill University, Montreal, Que.—B. Mus.
- University of Moncton (affiliated college Notre Dame d'Acadie), Moncton, N.B.—B. Mus.
- Mount Allison University, Sackville, N.B.—B.A. major
- Queen's University, Kingston, Ont.—B.A. major
- University of Toronto, Toronto, Ont.—B. Mus., M. Mus. and D. Mus.
- University of Western Ontario, London, Ont.—B.A. major
- St. Francis Xavier University (affiliated College Mount St. Bernard), Antigonish, N.S.—B.A. major
- Université Saint-Louis, Edmundston, N.B.—B. Mus.
- University of Saskatchewan, Saskatoon, Sask.—B.A. major and B.Ed. music
- Université de Sherbrooke, Sherbrooke, Que.—B.A. major (affiliated Collège du Sacré-Cœur).
- University of Victoria, Victoria, B.C.—B. Mus.

Advanced instruction in music is also given at the Conservatoire de Musique et d'Art Dramatique in both Montreal and Quebec. Opera may be studied at the Royal Conservatory Opera School of the University of Toronto where advanced students work in close collaboration with the Canadian Opera Company and also at the Conservatoire de Musique et d'Art Dramatique and the Banff School of Fine Arts (summer), Banff, Alta.

A Bachelor degree with specialization in drama may be obtained at Queen's University and the Universities of Alberta, Saskatchewan and British Columbia. Advanced instruction is also given during the summer at the Banff School of Fine Arts. The University of Toronto recently announced its first chair of drama, although it does not expect to offer degrees immediately. The University of British Columbia hopes to offer a post-graduate degree in theatre leading to the M.A. Some graduate courses are offered at the University of Saskatchewan and at the University of Alberta a degree course in drama is available. The National Theatre School of Canada offers complete practical training for talented students. It is bilingual, winter courses being held at Montreal, Que., and summer at Stratford, Ont. Three years are required for the acting course, and two for the technical and production studies. The Manitoba Theatre School at Winnipeg is also of importance.

The National Ballet School at Toronto is the only residential ballet school in Canada. It offers academic studies together with practical instruction. Professional instruction is also offered by two other major Canadian ballet companies, Les Grands Ballets Canadiens, Montreal, and the Royal Winnipeg Ballet, Winnipeg. The Canadian School of Ballet is located in Kelowna, B.C., and advanced ballet training is given during the summer at the Banff School of Fine Arts.



## Museums

Modern museums, in Canada and elsewhere, are breaking away from the old concept of being mere repositories and are assuming an important role as educational and cultural centres. They have an advantage over other agencies of education in that they are able to provide, for study and exhibition, actual, original objects as well as descriptions and pictures of such objects. Canadian museums of history and science offer many educational services to the public through exhibits, guided tours, lectures, and scientific and popular publications. The following museums have staff members who are specifically charged with organizing programs in education and providing extension services:—

Nova Scotia Museum, Halifax, N.S.

McGill University Museums, Montreal, Que.

National Museum of Canada, Ottawa, Ont.

Royal Ontario Museum, Toronto, Ont.

Saskatchewan Museum of Natural History, Regina, Sask.

Other museums that conduct educational and extension programs using the regular curatorial and administrative staff are:—

The New Brunswick Museum, Saint John, N.B.

Museum of the Province of Quebec, Quebec, Que.

The Manitoba Museum, Winnipeg, Man.

Provincial Museum of Natural History and Anthropology, Victoria, B.C.

Direct work with schools may involve the holding of classes within the museum or visits of museum lecturers, with exhibits, to the schools. More informal are the guided tours for visiting school classes, the lending of specimens, slides, filmstrips or motion picture films to schools, and the training of student-teachers in the educational use of the museum. A number of museums have special programs for children, not directly associated with school work. These include Saturday lectures and film showings, activity groups, nature clubs and field excursions.

For adults, museums offer lectures, film showings and guided tours, the latter usually available throughout the year. Staff members may be sent to give lectures to service clubs, church groups, parent-teacher associations and hobby clubs. The latter, such as naturalists' groups, mineral clubs and astronomy societies, may use the museum as their headquarters. Travelling exhibits are prepared for showing at local fairs, historical celebrations and conventions. At least seven Canadian museums have conducted regular radio or television programs and others have made occasional contributions. Some historical museums stage annual events during which the arts, crafts or industries represented by the exhibits are demonstrated to the public.

**The National Museum of Canada.\***—The National Museum originated in the Geological Survey of Canada and its early history is inseparable from that institution. The first united Parliament of Upper and Lower Canada met in Montreal in 1841. In July of that year the Natural History Society of Montreal and the Literary and Historical Society of Quebec petitioned the Government to carry out a geological survey. As a result, a resolution was passed in the Estimates on Sept. 10 to defray the expenses of a Geological Survey of the Province of Canada.

William E. Logan was appointed the first director of the Geological Survey in 1842. He and his assistant, Alexander Murray, undertook their first field work in 1843, and their collections formed the humble beginnings of the National Museum. Logan was much more than a mere geologist and his interests extended to other branches of natural science. His diaries contain accurate drawings of named plants. He wrote in his annual report for the

\* Prepared by Dr. A. W. Banfield, Director, Natural History Branch, and Dr. R. Glover, Director, Human History Branch, National Museum of Canada, Ottawa.



year 1852-53: "It may be a consideration whether a growing country like Canada could not afford to anticipate what future importance may require in the nature of a national museum and at some future time not far distant, erect an appropriate edifice especially planned for the purpose."

In the meantime, the officers of the Geological Survey continued to collect for the geological museum. In 1856, Elkanah Billings, a palaeontologist, was added to the staff, the first of a number of specialists, and the legislation passed that year to continue the work of the Geological Survey specified the establishment of a geological museum, open to the public, to exhibit specimens, books and instruments.

In 1874, the practice of recording the number of visitors to the Museum was commenced; from May 1874 to April 1875 the number of visitors was 1,017 and by the year ended April 1896 it had reached 31,595. In 1874, the distribution of specimens of minerals, rocks and other natural history objects to schools was started with a donation to the Board of School Teachers of Elora, Ont. The first organized Museum lecture program was undertaken in 1912, with a series of lectures for young people after school; by 1915, Saturday morning lectures for children and evening lectures for adults—both features of the Museum program today—were in operation.

The scope of the Museum was enlarged in the "Act to make better provision respecting the Geological and Natural History Survey of Canada and for maintenance of the Museum in connection therewith", of Apr. 28, 1877. In that Act the Survey was instructed "to study and report upon the flora and fauna of the Dominion" and "to continue to collect the necessary materials for a Canadian museum of natural history, mineralogy and geology". As early as the Act of 1856, the Geological Survey of Canada had been authorized "from time to time" to distribute publications relative to the Survey. From this authority developed the Museum's celebrated series of scientific bulletins presenting the researches of its staff.

The Act of 1877 established the Geological Survey and the Museum on a continuing basis and permitted the appointment of specialists in connection with natural history research. John Macoun was appointed to establish the division of biology in 1882. He was an eminent botanist who had accompanied the expedition of Sanford Fleming to explore Western Canada in 1871. Macoun's report of 1874 laid the groundwork for the establishment of western Canadian agriculture. He also published a catalogue of Canadian birds. In 1895 under the third Director of the Geological Survey, George M. Dawson, the Museum entered the field of Canadian anthropology.

Prior to 1880, the Museum occupied several buildings in Montreal but that year the Geological Survey moved to Ottawa, occupying the former Clarendon Hotel on Sussex Street. Construction of the Victoria Memorial Museum building was started in 1904 and the Geological Survey moved in in 1910. The Museum began an expanded program of research and exhibition under the direction of R. W. Brock, then Director of the Geological Survey of Canada. Unfortunately this program was curtailed during World War I because the burning of the Parliament Building, in 1916, forced Parliament to occupy the Museum building until 1919. Later, expansion of the exhibition halls was handicapped by the Museum sharing its building with the National Gallery of Canada and the Geological Survey of Canada. However, in 1927, the Governor General in Council gave authority "to designate the museum branch of the Department of Mines as the National Museum of Canada"; it is now part of the Department of the Secretary of State. During the past 20 years, particularly after the appointment of Dr. Frederick J. Alcock as Chief Curator, the Museum has increased its research, education and exhibition staff in order to play a more important role in the cultural life of Canada and perform the tasks properly assigned to the National Museum of Canada. A new National Museum building will be constructed in the heart of Ottawa within the next few years.

The responsibilities of a great museum include the collection, preservation, storage and study of objects related to the various disciplines that fall under its purview. The next

step is the undertaking of research by specialists in those fields and the publication of their findings to increase the total knowledge of their subjects. Typically, museums exhibit items from their collections as intrinsically beautiful displays and also to teach the public the scientific background to the subjects. This leads to the educational program of museums which usually includes lectures, workshops, guided tours for children and activity groups, travelling exhibits, loans, library service, and radio and television programs.

The National Museum of Canada is now organized to present all these facets for the enjoyment and education of the people of Canada. It is divided into three Branches—the Human History Branch, the Natural History Branch and the Science and Technology Branch. The Human History Branch contains the Divisions of Archaeology, Ethnology and Folklore, and History, together with the Canadian War Museum and the National Aviation Museum. The Natural History Branch contains the Divisions of Zoology, the National Herbarium, and Geology and Palaeontology. Services common to these two Branches are concerned with exhibitions, educational, technical and administration functions. In 1965-66 the staff totalled 226, including 56 administrative and professional personnel, 85 technical, operational and service personnel, 41 clerical personnel and 44 casual and prevailing rate employees.

The 1966 field research program in natural history included eleven expeditions to various parts of Canada. The work included investigations of intertidal invertebrates of the Strait of Juan de Fuca and Vancouver Island, shore fishes of Newfoundland, fauna of Sable Island, fishes and molluscs of the west coast of Hudson Bay, and birds of the Alberta Rockies and northern Ontario. Study of the fossil vertebrates of the Anderson and Horton River Valleys of the Northwest Territories was continued after the exciting discovery of the first fossil toothed birds in Canada and surveys of the Pleistocene faunas in Yukon Territory. Floral investigations were conducted in northern Ontario, southern British Columbia, northeastern Quebec and the Yukon Territory.

In addition, taxonomic studies of certain invertebrate groups were sponsored at Canadian universities, as well as field investigations of fossil fishes in the Maritimes, amphibians in Alberta, and dinosaurs in southeast Alberta, by university staffs. The National Museum also participated in a number of oceanographic cruises sponsored by the Fisheries Research Board and the Bedford Basin Oceanographic Institute to the eastern Pacific, Azores and Falkland Islands. Research in peat bogs on the Queen Charlotte Islands and the ecology of fluctuating northern lakes by European ecologists was also supported.

The education program continued with weekly lectures for adults, Saturday morning film programs for children, the junior nature club, the school loan collection, children's classes, guided tours, and the Canadian collection of nature photographs. During 1965 the National Museum recorded 314,800 visitors, the Canadian War Museum 188,020, the National Aviation Museum 119,310 and the National Aeronautical Collection at Rockcliffe 68,792.

During the past five years there has been a marked growth in the research carried out by the Human History Branch. Much of this is done under contract by scholars whose work is wholly or partly financed by the Museum, on the understanding that the Museum shall receive their collections and the right to publish their reports. This system has proved valuable in forging links between the National Museum and universities or other museums, and in developing archaeology and ethnology in Canada as well as in enriching the national collection and the Museum's publications. In 1965 members of the Archaeology Division did field researches in Nova Scotia, southeastern Ontario, near South Indian Lake in Manitoba, in the Yukon Territory and on Victoria and Banks Islands in the Northwest Territories. Additional field work was done under contract in Newfoundland, Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan and Alberta and in the Arctic on Ellesmere Island, near Wakeham Bay and Igloodik. The Ethnology Division continued

its research program, both by staff members and by contract in linguistics, ethnohistory and the ethnology of the Algonkians, Athapaskans, the West Coast and Plateau Indians and the Eskimo. A conference on Band organization was held at the National Museum in late August, attended by 14 leading ethnologists from Canada and the United States. The Folklorist returned to her studies in the Gaspé region and supervised contracts for research in the Maritimes and in the Prairie Provinces. The History Division gave four contracts for the pursuit of original research, continued studies for the preparation of exhibits and made progress in the task of cataloguing.

The exhibition program in 1964-65 included a new Indian Hall and additional work in the Hall of Birds. The education program continued with weekly lectures for adults, Saturday morning film programs for children, the junior nature study club, the school loan collection, children's classes, guided tours, and the Canadian collection of nature photographs.

In 1961, the Government announced the intention to establish, as a third branch of the National Museum, a Museum of Science and Technology, which would incorporate the existing National Aviation Museum. Funds for the inauguration of this project were provided in the fiscal year 1966-67 and a Director was appointed, who will be responsible for planning the display and research activities of the new institution.

### Statistics of Museums and Art Galleries

In response to the need for information concerning the existence and operation of museums, art galleries and similar institutions in Canada, a survey was conducted by the Dominion Bureau of Statistics with the assistance of the Canadian Museums Association, provincial government departments concerned with museums and other interested individuals. The results are given in DBS publication *Museums and Art Galleries 1964* (Catalogue No. 81-529), and are summarized here in Table 1. Information was collected from a wide variety of institutions and organizations, including art galleries, art exhibit centres; historical museums, historic houses, archives; natural history museums, botanical gardens, zoological parks, aquaria, planetaria; preservation projects, public libraries.

Of the 385 institutions reporting, 44 conducted educational programs for the communities in which they were located, enrolment in the study groups numbering 18,454 children and 5,974 adults; 67 conducted extension services to other communities; 128 institutions reported the conduct of such public events as lectures, film showings, guided tours, etc., with total attendance of close to 855,000; and 101 provided local library service.

#### 1.—Museums, Art Galleries and Similar Institutions classified by Type, Governing Authority and Province, 1964

Type and Governing Authority	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	No.	No.	No.	No.	No.	No.
Art <sup>1</sup> .....	1	2	2	4	16	25
History <sup>2</sup> .....	1	3	17	5	30	113
Science <sup>3</sup> .....	—	—	2	1	11	12
<b>Totals</b> .....	<b>2</b>	<b>5</b>	<b>21</b>	<b>10</b>	<b>57</b>	<b>150</b>
Independent.....	—	3	6	5	27	46
Municipality.....	—	2	1	—	4	53
Provincial Government.....	1	—	7	1	5	19
Educational institution.....	1	—	2	—	10	6
Federal Government.....	—	—	5	1	4	14
Combined.....	—	—	—	3	7	12

For footnotes, see end of table.



**1.—Museums, Art Galleries and Similar Institutions classified by Type,  
Governing Authority and Province, 1964—concluded**

Type and Governing Authority	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.
Art <sup>1</sup> .....	4	5	7	5	—	71
History <sup>2</sup> .....	8	17	25	40	2	261
Science <sup>3</sup> .....	4	5	7	11	—	53
<b>Totals</b> .....	<b>16</b>	<b>27</b>	<b>39</b>	<b>56</b>	<b>2</b>	<b>385</b>
Independent.....	8	7	19	27	2	150
Municipality.....	2	6	8	10	—	86
Provincial Government.....	—	5	2	9	—	49
Educational institution.....	2	3	2	4	—	30
Federal Government.....	3	4	3	3	—	37
Combined.....	1	2	5	3	—	33

<sup>1</sup> Includes art galleries and art exhibit centres.

<sup>2</sup> Includes historical museums, historic houses and preservation projects.

<sup>3</sup> Includes natural history museums, botanical gardens, zoological parks, aquaria and planetaria.

## Section 2.—The Educational Functions of the Canadian Broadcasting Corporation and the National Film Board

**Educational Functions of the Canadian Broadcasting Corporation.**—Many hours of educational and semi-educational programs are broadcast annually by the Canadian Broadcasting Corporation's radio and television facilities. Whether these programs are directed to children or adults, entertainment is combined with information whenever possible. Spoken-word programs, presented as readings, talks, discussions, documentary programs, dramatizations or in forms combined with music, cover a very wide range of interests.

Specially planned child and youth programming appeals to all age groups from pre-school to teens as in television's *Through the Eyes of Tomorrow* and *Jeunesse Oblige*. Educational programs include credit courses on *Cours-universitaire* and many school broadcasts produced in co-operation with the various provincial educational authorities, as well as informal education programs. In 1965-66 *University of the Air* studied the Ecological Viewpoint; the *Massey Lectures* covered the subject of Politics of Privation; and *Project '66* discussed the Canadian mood. In 1966-67, an educational series consisting of highlights of the previous season's school telecasts is being presented on *Sunshine Semester*.

Programs of an adult education nature are presented frequently by the English networks and co-operation in program planning is received from various educational organizations. The CBC is an active participant in the Joint Planning Commission, a body established by the Canadian Association for Adult Education for exchange of information and co-ordination of plans for adult education in Canada. As illustrations of special-interest programming, five one-hour instructional courses on farming were produced by the CBC Farms and Fisheries Department in 1965-66 in co-operation with the Departments of Agriculture of the three Prairie Provinces; and the French network produced four special programs on farm management in co-operation with the Quebec Ministry of Agriculture, designed to help the transition of farmers in Quebec from the small family holding to something more along the lines of the industrial or commercial enterprise. Religious programming ranges from devotional broadcasts to studies of religion in the community and the changing world; outstanding in 1965-66 were *Ferment* with Paul Tillich and the Bishop of Woolwich, and *Bilan de Vatican II* which, on its second showing, attracted a million viewers.

A number of public affairs television programs are designed to analyse and offer comments and opinions on the events and trends of the day; this, combined with their fast-moving format and their controversial approach, attracts large audiences who greatly enjoy the programs. Thus in 1965-66 *The Public Eye* discussed Capitalism Today and *Défis Nouveaux* studied the Problem of the Aging in Canada. *The Sixties* examined Canadian Immigration and the Problem of Fresh Water Supplies in North America. *This Hour Has Seven Days* and *Le Sel de la semaine* presented ideas and opinions about current events, using comedy, music and satire as regular techniques. *CBC Newsmagazine* presented weekly interview and documentary programs. *Camera 65* on the French television network reported on national and international events and actualities. In the 1966-67 season, *Twenty Million Questions*, a new public affairs program, will keep Canada's 20,000,000 citizens informed about major political issues and other topical matters of national concern.

Special programs are broadcast on radio covering the three-day Winter Conference of the Canadian Institute on Public Affairs, which examines sociological questions in open meetings and group discussions. The summer evening sessions of the annual week-long Couchiching Conference have been broadcast for a number of years. This Conference, organized jointly with the Canadian Institute on Public Affairs, examines Canadian and international affairs in open meetings and group discussions.

The French radio network presents *Fémina* five times a week for women listeners and also broadcasts a number of weekly programs dealing with fine arts, music, literature, theatrical arts, sciences, religion and philosophy under the auspices of *Le Service des émissions éducatives et d'affaires publiques*. On the English network *The Feminine Touch*, an anthology of writings by women, including fiction and non-fiction, verse and prose, was broadcast during the summer of 1966. *Take Thirty*, a week-day television show for women, has a different 'flavour' on each program—entertainment and interviews of performers; travel topics and features on events in Canada and abroad; cooking, child care and household management; discussions on social problems; and interviews with men and women from the sporting world. In the 1966-67 season, *Take Thirty* will have programs filmed on location in London, Paris, New York, Newfoundland and five African countries. Its closest radio counterpart is *Trans-Canada Matinée*.

A few of the programs for the 1966-67 season include such favourites as CBC television's major cultural series *Festival*, which enters its seventh season presenting drama and concert programs, and *Show of the Week*, which is a major showcase for a great variety of performers such as Wayne and Shuster and Juliette. *A World of Music*, a new variety series, features music from many lands sung by performers from all over the world, and an *Anthology* series gives new and established Canadian writers an opportunity to air unpublished short stories, poetry and plays. Centennial programs include *The Reluctant Nation*, which recreates important historical events and personalities that shaped Canada's development during the 1880s and '90s; *Chansons*, a television musical salute to the Centennial of Confederation, which spotlights authentic folk music presented by top Canadian artists and filmed in various colourful locales from St. John's to Victoria; full coverage of EXPO 67; the Pan-American Games in Winnipeg; Camera Canada's documentaries; and Canada 100. William Ronald, one of Canada's leading painters, will again be host as *The Umbrella* begins its second season of exploration of the arts; and *Life and the Land*, a half-hour country and gardening program bringing items of national and local interest to all viewers, will continue on the English network.

**Educational Functions of the National Film Board.**—The National Film Board, an agency of the Federal Government, was established by Act of Parliament in 1939 and reconstituted by the National Film Act in 1950. In the years since its establishment, the Board has grown from a supervisory body over Canadian Government motion picture activities to a national documentary film-producing and -distributing organization whose films about Canada are seen wherever people may freely assemble. The Board produces

and distributes filmstrips and still photographs on Canadian themes in accordance with its primary function outlined in the Act "to initiate and promote the production and distribution of films in the national interest". Films are produced primarily in the English and French languages and, whenever possible, foreign-language versions are prepared to increase the usefulness of Board films in foreign countries.

The 16mm. community film program is based on a nation-wide system of film circuits, film councils and libraries, strongly supported by organizations and individuals engaged in community activities. There are more than 700 national, provincial and community film distribution outlets from which thousands of 16mm. prints are available for public use throughout the country. These prints are acquired for circulation by purchase or by loan from the Board.

A large part of the 16mm. community film audience is reached through classroom showings, indicating progress in the development of audio-visual aid programs in Canadian schools and universities. Another noticeable trend is the more selective use of films by community organizations and groups for particular purposes. This is attributed in part to the availability of Board productions which present series of film studies related to central themes, and to the availability of a broad range of topics which include individual films particularly suited to group objectives and programs.

Films produced by the Board are shown in commercial theatres and on television in Canada and abroad, and newsreel features are also issued regularly for theatrical and television purposes. Distribution of theatrical subjects is arranged by contract with commercial distributing organizations.

Series of original films are shown regularly over English-language and French-language television networks in Canada. Individual films from the Board's extensive general library are available to CBC and privately operated stations. Abroad, because of expanding television facilities in many countries, Board films are seen by audiences which could not otherwise be reached.

In addition to commercial distribution through theatres and television in other countries, 16mm. print circulation is carried on through posts of the Departments of External Affairs and Trade and Commerce, through National Film Board territorial offices at London in England, Paris in France, New York, Chicago and San Francisco in the United States, New Delhi in India, and Buenos Aires in Argentina, as well as through libraries operated by various education agencies. Hundreds of prints of National Film Board films are also sold in other countries each year. Exchange agreements are in effect between the Board and government film-producing organizations in other lands; this means that films of various nations are freely exchanged with those of Canada, aiding international understanding.

The National Film Board maintains a library of more than 150,000 still photographs, which are available at nominal cost to magazines, newspapers and other periodicals wishing to present current information about Canada.

### Section 3.—The Canada Council

The Canada Council was created by the Government of Canada in 1957 to "foster and promote the study and enjoyment of, and the production of works in, the arts, humanities and social sciences". Its task is carried out mainly through a broad program of fellowships and grants of various types. It also shares the responsibility for Canada's cultural relations with other countries and administers, as a separate agency, the Canadian National Commission for UNESCO.

The Council is an independent agency which reports annually to Parliament through a member of the Cabinet, but sets its own policies and makes its own decisions within the terms of the Canada Council Act. It is made up of 21 members appointed by the Governor



in Council. The chairman and vice-chairman serve for terms not exceeding five years and other members for terms of three years. The Council usually meets at least five times a year. The day to day administrative work is carried out by a permanent staff in Ottawa, headed by a director and an associate director who are appointed by the Governor in Council.

**Income.**—The Council's income is derived mainly from two funds, originally of \$50,000,000 each, set up by Parliament when the Council was created. The University Capital Grants Fund, which is now nearing depletion, has enabled the Council to help the universities expand their physical facilities at a crucial period by awarding them up to 50 p.c. of the cost of eligible buildings. The Council's main source of operating income is the Endowment Fund, of which only the interest may be used. It yields some \$3,100,000 annually and out of this amount the Council must normally finance its various programs and its administrative expenses, as well as those of the Canadian National Commission for UNESCO. However, as its resources had become inadequate to meet the growing needs of the arts, humanities and social sciences, the Council received from the Canadian Government, in April 1965, an unconditional grant of \$10,000,000. This grant and the interest earned on it are adding to the income of the Endowment Fund for a period of a few years.

**Assistance to the Arts, Humanities and Social Sciences.**—The Canada Council's assistance is directed to both individuals and organizations. Assistance to individuals is mainly in the form of fellowships, scholarships and research grants. In eight years, the Council has awarded scholarships and fellowships at the master's, doctoral and post-doctoral levels to almost 4,000 scholars in the humanities and social sciences, and to more than 1,200 performing and creative artists. Assistance to organizations, mostly in the arts, takes a large proportion of the revenue from the Endowment Fund.

In the year ended Mar. 31, 1966, the Council devoted approximately \$2,856,000 to the humanities and social sciences, of which \$1,606,000 financed 736 fellowships at the pre-doctoral and post-doctoral levels, and \$1,250,000 was applied to grants in aid of research, university libraries, meetings of scholars and artists, visiting lecturers, publication of scholarly works and other forms of assistance. In the arts, the Council spent \$3,441,000, of which \$425,000 was used to finance 135 scholarships and fellowships and \$3,016,000 was applied to grants, including about \$699,000 for music, \$271,000 for festivals, \$602,000 for the theatre, \$564,000 for dance and opera, \$147,000 for the visual arts, \$234,000 for service and training organizations and \$84,000 for publications.

Apart from its own programs, the Council administers on behalf of the Canadian Government a program of scholarships for students, scholars and artists from French-speaking countries (at present, France, Belgium and Switzerland) wishing to come to Canada. In 1965-66, awards made by the Council under this program totalled \$613,000.

In the fields of engineering, medicine and science, the Council has been offering to qualified Canadian applicants a few research fellowships for work in Canada. These were financed by a special fund provided by a private donor. In the year 1965-66, they amounted to approximately \$38,000.

Under its power to "make awards to persons in Canada for outstanding accomplishments in the arts, humanities or social sciences", the Council awards annually its own Canada Council Medal and the Molson Prize which is financed by funds from the Molson Foundation. It also finances the annual Governor General's Literary Prizes, which are awarded by an autonomous committee.

**UNESCO.**—The Canada Council Act provides for certain functions in relation to the United Nations Educational, Scientific and Cultural Organization. The Council has accordingly established a National Commission for UNESCO and provides its secretariat and budget. As an agent of the Council, the National Commission co-ordinates UNESCO

program activities abroad and administers a small program in furtherance of UNESCO objectives. In the year ended Mar. 31, 1966, the Council spent approximately \$135,000 through the National Commission for these purposes.

### Section 4.—Library Services

**The National Library.**—The National Library of Canada came into existence formally on Jan. 1, 1953 by the proclamation of the National Library Act (RSC 1952, c. 330). On the same date it absorbed the Canadian Bibliographic Centre, which had been engaged in preliminary work and planning since 1950. The Act established a National Library Advisory Council, consisting of the National Librarian who serves as chairman, the Parliamentary Librarian, and twelve appointed members, at least one of whom must be from each of the ten provinces.

By 1966, although the Library was still housed in temporary quarters and only a limited purchasing program could be undertaken, the book collection consisted of over 300,000 volumes, supplemented by microcopies of more than 100,000 additional titles. Under the terms of the Copyright Act and the Library's own Book Deposit Regulations, 8,128 titles were received in the year ended Mar. 31, 1966, 5,968 of which were related in some direct way to Canada.

*Canadiana*, the Library's monthly catalogue of new books and pamphlets relating to Canada, described over 12,000 items in 1965; these included trade and general publications and official publications of the federal and provincial governments. *Canadiana* has been published since 1950 and is cumulated annually; a cumulated index covering the period 1950-62 was published in 1965.\*

The *National Union Catalogue* lists 9,500,000 volumes in 224 government, university, public and special libraries in all provinces. New accessions are reported regularly by these libraries, and the Catalogue thus forms a continuously up-to-date key to the main book resources of the country. More than half a million additions were reported to the Catalogue in 1965-66. During the year ended Mar. 31, 1966, the Reference Division was asked to locate nearly 40,000 titles and it is noteworthy that copies of 80 p.c. of them were found in Canadian libraries. About one third of the requests were for books in the field of science and technology and 80 p.c. were for books published since 1925.

The National Library also publishes bibliographies and the annual cumulation of the *Canadian Index to Periodicals*.

A permanent National Library and Archives Building is under construction on Wellington Street, west of the Parliament Buildings in Ottawa; it will be completed late in 1966.

**The National Science Library.**—The National Research Council Library serves as the library for the Council and as the National Science Library of Canada. Plans for developing a central scientific library were proposed as early as 1924 by the Honorary Advisory Council for Scientific and Industrial Research, established in 1916 and now known as the National Research Council (see pp. 384-391). The Library grew slowly until 1928 when the Council's first research laboratories were set up. Since then it has been developed to parallel the growth and expansion of the laboratories and the national interests and activities of the Council with the result that in 1953, under an agreement with the more recently established National Library, the National Research Council Library formally assumed responsibility for national library services in the fields of science and technology. By 1965, the Library's collection, comprising over 600,000 volumes, was growing at the rate of 150,000 items a year and included journals and other serial publications, books, pamphlets and technical and research reports. The bulk of this material is housed in the main Library with smaller and more specialized collections in six branch Libraries.

\* A list of 400 selected titles of "Books About Canada", prepared by the National Library, appears in Chapter XXVII of this volume.

The resources of the Library are made available by means of an extensive inter-library loan and photocopying service. For purposes of current awareness, the Library issues twice a month its *Recent Additions to the Library*, and a list of *Serial Publications in the Library* is also issued at frequent intervals through the use of data processing equipment. Reference and research services include answering requests for scientific information, literature searches and the compilation of abstracts and bibliographies, and the identification and location of obscure publications.

*The Canadian Index of Scientific Translations*, a card index to the location of completed English translations in Canada and other countries, is maintained by the Library. Translations of scientific articles prepared by the Library's Translations Section are listed and made available in Canada and abroad. A complete English translation of the Russian journal *Problemy Severa (Problems of the North)* is also the responsibility of this Section.

The National Science Library is responsible for the publication of the *Union List of Scientific Serials in Canadian Libraries* and the *Directory of Canadian Scientific and Technical Periodicals*.

**Public Libraries.**—Provincial governments have jurisdiction over public libraries but these are generally administered and regulated by municipal authorities; exceptions are Newfoundland and Prince Edward Island where the provincial governments maintain the public library service throughout the province. Municipal libraries serve the urban population and provincial and regional libraries serve the more widely scattered population. Summary results of the annual public library survey for 1964 are given in Table 2, with comparable totals for 1963. Circulation of books was 4.0 per capita in the later year and current operating payments were \$1.40, compared with 3.7 per capita and \$1.28 in 1963. Of the total full-time staff in 1964, about one quarter were professional librarians.

2.—Summary Statistics for All Public Libraries, 1964 with Totals for 1963

Province or Territory	Population Served	Libraries	Stocks of Books, Periodicals and Pamphlets	Circulation	Current Operating Payments	Full-Time Staff
	No.	No.	No.	No.	\$	No.
Newfoundland.....	481,000	3	327,769	764,827	199,201	40
Prince Edward Island.....	107,000	1	110,651	250,631	52,326	6
Nova Scotia.....	492,102	14	480,290	2,574,238	692,989	107
New Brunswick.....	226,159	7	225,166	1,352,655	288,500	35
Quebec.....	2,956,788	230	3,160,043	6,154,366	2,848,167	333
Ontario.....	5,820,577	314	9,220,859	41,723,022	14,717,813	1,667
Manitoba.....	529,998	19	656,300	3,367,536	1,146,269	142
Saskatchewan.....	425,176	63	848,840	2,892,328	1,320,723	173
Alberta.....	927,580	158	1,710,075	6,488,375	2,099,159	245
British Columbia.....	1,413,073	79	2,203,084	10,609,781	3,590,665	453
Yukon Territory.....	12,000	1	38,600	..	48,507	3
<b>Totals, 1964.....</b>	<b>13,391,453</b>	<b>889</b>	<b>18,981,677</b>	<b>76,177,759</b>	<b>27,004,319</b>	<b>3,204</b>
<b>Totals, 1963.....</b>	<b>13,236,808</b>	<b>884</b>	<b>16,609,264</b>	<b>70,418,478</b>	<b>24,187,650</b>	<b>3,116</b>

**University, College and School Libraries.**—Libraries in 77 universities and colleges having enrolments of 100 or more students reported over 10,000,000 volumes or 63.9 volumes per student in 1963-64, compared with 62.9 in 1962-63. Expenditures were \$90.71 per student, an increase of \$20.88 over the previous year. Full-time staff increased by 338 in the same comparison but the proportion of professional librarians was slightly lower in 1963-64 at 29.9 p.c.



### 3.—Libraries in Universities and Colleges, by Province, Academic Year 1963-64 with Totals for 1962-63

Province	Libraries	Volumes	Enrol- ment Served	Expend- itures per Full-Time Student <sup>1</sup>
	No.	No.	No.	\$
Newfoundland.....	1	113,597	2,447	67.78
Prince Edward Island.....	2	30,805	841	23.19
Nova Scotia.....	9	665,182	8,290	66.24
New Brunswick.....	4	301,901	6,149	63.40
Quebec.....	15	2,658,874	40,878	76.23
Ontario.....	27	4,246,668	50,279	122.58
Manitoba.....	8	505,482	9,431	57.97
Saskatchewan.....	3	335,841	10,280	58.85
Alberta.....	4	505,304	12,366	112.75
British Columbia.....	4	862,237	19,111	83.63
<b>Totals, 1963-64.....</b>	<b>77</b>	<b>10,225,891</b>	<b>160,072</b>	<b>90.71</b>
<b>Totals, 1962-63.....</b>	<b>73</b>	<b>9,085,088</b>	<b>144,513</b>	<b>69.83</b>

<sup>1</sup> Full-time and equivalent.

In 1963-64 only 53.2 p.c. of the reporting 4,892 elementary and secondary schools had centralized libraries—58 p.c. of the secondary schools and 24 p.c. of the elementary schools. Their total bookstock was 7,625,832 or 5.2 books per pupil served, compared with 4.8 in 1962-63. Payments for books and other library materials ranged from \$0.95 per pupil served in New Brunswick to \$5.18 in Saskatchewan, the average for Canada being \$2.63. Professional school librarians numbered 211, an increase of almost 18 p.c. over the previous year but still far short of requirements. In an attempt to fill part of the need, some professional librarians supervised several school libraries rather than that of an individual school.

### 4.—Centralized School Libraries, by Province, Academic Year 1963-64 with Totals for 1962-63

Province	Libraries	Books	Enrol- ment Served	Payment for Books per Pupil
	No.	No.	No.	\$
Newfoundland.....	4	3,812	1,644	1.45
Prince Edward Island.....	7	11,982	3,750	1.39
Nova Scotia.....	59	121,691	33,097	0.97
New Brunswick.....	38	109,784	25,368	0.95
Quebec.....	944	2,298,289	426,584	2.16
Ontario.....	927	3,119,053	603,955	2.90
Manitoba.....	73	292,968	49,356	3.03
Saskatchewan.....	67	204,443	29,812	5.18
Alberta.....	268	677,376	127,429	2.96
British Columbia.....	215	786,454	160,915	2.50
<b>Totals, 1963-64.....</b>	<b>2,602</b>	<b>7,625,832</b>	<b>1,461,919</b>	<b>2.63</b>
<b>Totals, 1962-63.....</b>	<b>2,067</b>	<b>5,768,007</b>	<b>1,213,193</b>	<b>2.45</b>

Libraries in provincial post-secondary institutions were surveyed for the first time in 1963-64; they included libraries in 35 technical institutes across Canada, 66 of the 107

*écoles normales* in Quebec, 10 teachers colleges in Ontario and one each in Nova Scotia, New Brunswick and Manitoba. Of the 35 technical institutes, 27 reported centralized libraries; bookstock per pupil was 14.2 volumes and operating expenditures \$15.40 per pupil. The 68 *écoles normales* in Quebec reported 9,200 students, 65.5 volumes per student, and an operating expenditure of \$27.97.

#### 5.—Libraries in Technical Institutes and Teachers Colleges, 1963-64<sup>1</sup>

Province	Full-Time Enrolment	Books, Periodicals and Pamphlets	Staff	Total Operating Expenses of Libraries
	No.	No.	No.	\$
Newfoundland.....	524	1,150	1	5,420
Nova Scotia.....	441	11,676	1	14,935
New Brunswick.....	1,720	35,696	1	26,300
Quebec.....	14,883	767,056	68	364,191
Ontario.....	10,308	135,386	13	132,214
Manitoba.....	600	8,359	1	10,600
Saskatchewan.....	1,055	13,004	6	49,689
Alberta.....	3,134	17,709	4	50,300
British Columbia.....	1,399	10,595	—	1,980
<b>Totals.....</b>	<b>34,064</b>	<b>1,000,631</b>	<b>95</b>	<b>655,629</b>

<sup>1</sup> Includes statistics of 28 technical institutes and 79 teachers colleges.

**Library Education.**—In 1965, the five Canadian library schools awarded 318 Bachelor of Library Science degrees, an increase of 11.2 p.c. over 1964. Despite this increase, many more professional librarians are needed to raise service to acceptable standards, especially in public and secondary school libraries. Table 6 contains data on 78 p.c. of the graduates, three quarters of whom were women. University libraries absorbed 50 p.c. of these graduates, 31 p.c. secured positions in public libraries and the remainder now serve in government and special libraries or in other countries. Quebec and Ontario employed about 62 p.c. of them. Median beginning salaries ranged from \$5,265 in the Atlantic Provinces to \$5,700 in the Prairie Provinces. School librarians received almost \$1,500 more per annum than public librarians since the former often have teacher training as well as teaching experience.

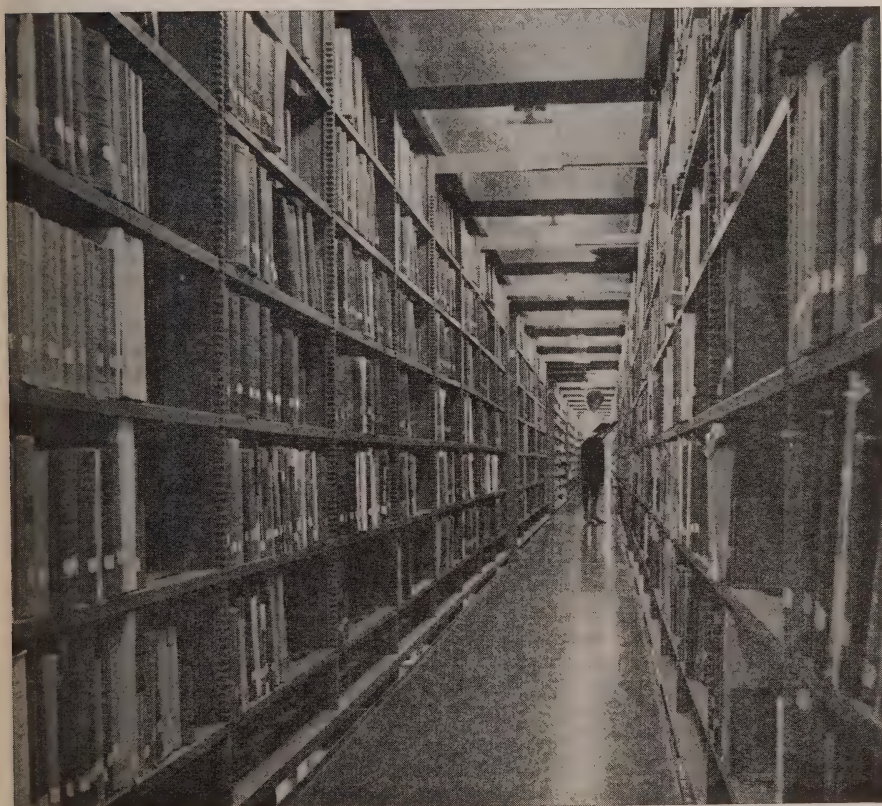
#### 6.—Library School Graduates, 1965 with Totals for 1964

Library School at—	Graduates		Destinations				Median Beginning Salary
	Male	Female	Public Library	University Library	School Library	Other and Unknown	
	No.	No.	No.	No.	No.	No.	\$
McGill University.....	6	56	10	38	3	9	5,325
University of Montreal.....	28	20	12	25	4	3	5,400
University of Ottawa.....	9	4	1	5	2	5	5,550
University of Toronto.....	7	70	39	35	13	11	5,507
University of British Columbia.....	12	37	16	22	4	3	5,672
<b>Totals, 1965<sup>1</sup>.....</b>	<b>62</b>	<b>187</b>	<b>78</b>	<b>125</b>	<b>26</b>	<b>31</b>	<b>5,493</b>
<b>Totals, 1964<sup>1</sup>.....</b>	<b>68</b>	<b>172</b>	<b>61</b>	<b>103</b>	<b>18</b>	<b>58</b>	<b>5,247</b>

<sup>1</sup> In addition, there were 69 graduates in 1965 and 50 graduates in 1964 who did not report detailed information.

**7.—Median Salaries of Librarians in Professional Positions, 1964**

Position	Public Libraries in Centres of over 25,000 Population	Regional and Co-operative Public Libraries	Provincial Public Library Services	University and College Libraries (1963-64)
	\$	\$	\$	\$
Chief Librarian.....	7,889	7,036	8,875	8,875
Assistant Chief Librarian.....	7,875	5,958	8,000	8,687
Division, Department or Branch Head.....	7,022	5,208	6,250	6,981
General Librarian.....	5,667	5,809	7,750	5,303



One of the nine floors of the National Science Library of Canada. Its collection of well over half a million books, journals, articles and reports on scientific and technological subjects is growing at the rate of from 500 to 700 items daily.



# CHAPTER VIII.—SCIENTIFIC AND INDUSTRIAL RESEARCH\*

## CONSPECTUS

	PAGE		PAGE
SECTION 1. THE NATIONAL RESEARCH COUNCIL OF CANADA.....	384	SECTION 5. OTHER SCIENTIFIC AND INDUSTRIAL RESEARCH FACILITIES.....	401
SECTION 2. RESEARCH IN THE ATOMIC ENERGY FIELD.....	391	Subsection 1. Federal Organizations.....	401
SECTION 3. SPACE RESEARCH IN CANADA.....	397	Subsection 2. Provincial Organizations.....	401
SECTION 4. RESEARCH IN GEOPHYSICS AND ASTRONOMY.....	399	Subsection 3. University Research.....	404
		Subsection 4. Industrial Research.....	406
		SECTION 6. FEDERAL GOVERNMENT EXPENDITURES ON SCIENTIFIC ACTIVITIES.....	409

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

The characteristic problems of this country, particularly its large area, its small population and its unique industrial structure, have led to a typically Canadian organization of research. Early research was, of course, related to the primary industries. Geological mapping and agricultural research were almost the only areas of activity until the beginning of the present century. In 1898 research in the field of fisheries was assigned to an independent honorary board which has continued to the present as the Fisheries Research Board. In 1916 the Federal Government set up the National Research Council; its early duties were to encourage and stimulate research in the universities through grants and scholarships and it entered active research only with the establishment of its own laboratory system in the late 1920s and early 1930s. Great expansion in scientific research took place during the War when the National Research Council assumed the responsibility for research for the three Armed Services including the development of atomic energy. At the end of the War, the Council returned to its previous activities—the promotion of research in the universities and research for secondary industry. In 1947, the Defence Research Board was set up in the Department of National Defence with responsibility for military research (see Chapter XXVI). In 1952, the Crown corporation, Atomic Energy of Canada Limited, was established to proceed with the development of atomic energy in Canada, and certain other Crown corporations, such as Eldorado Mining and Refining Limited, Polymer Corporation Limited and Canada's largest national utility, the Canadian National Railways, developed important research programs.

Until the 1960s, industrial research was slow to develop in Canada, although certain large industries, particularly the chemical industry and the pulp and paper industry, had long histories of successful research effort. Research councils or foundations were set up by several provinces to improve industrial production efficiency (see pp. 401-404); of these, the Ontario Research Foundation and the British Columbia Research Council, although established under provincial legislation, are self-governing institutions engaged in research and development on contract for manufacturers, departments of government and on their

\* A Selection of Canadian Achievements in Science and Technology, 1800-1964, compiled by Dr. John R. Kohr of the National Research Council, Ottawa, appears in the 1965 Canada Year Book, pp. 398-401. This is available in reprint form from the Dominion Bureau of Statistics, Ottawa.

own account, and derive their current revenue mainly from sponsored research. The Pulp and Paper Research Institute of Canada (see Forestry Chapter) is the one major research association that operates on a co-operative basis; its operating funds are provided by industry and its facilities by the Federal Government and McGill University, all three vitally interested in ensuring that this industry maintains its competitive position in world markets. However, through the years the primary resource base of industry generally was not conducive to the establishment of industrial research laboratories. Also, the prevalence of foreign-owned manufacturing companies exerted considerable influence on the development of industrial research. Canadian subsidiaries of foreign companies had ready access to the research and development results of their parent companies and Canadian companies had little incentive to establish their own laboratories or to develop products specifically for the Canadian market. But now, Canadian industry across the country is greatly extending research facilities and becoming much more aware of the advantages to be gained therefrom. To meet the challenge of competition from other countries in the manufacture of ultra-modern production, it is impressively stepping up its own scientific and technical studies. The Ontario Research Community at Sheridan Park in Metropolitan Toronto is a virtual breakthrough for Canadian industry. So is the research centre at Pointe Claire in Metropolitan Montreal. Such industrial research centres as these will ensure that Canadian industries remain competitive and, perhaps more important, will permit Canadian graduate students to find both challenge and creative opportunity at home. The value of buildings already built or under construction at Sheridan Park is \$27,000,000 and several sites are still available. Elsewhere in the country a number of new industrial research centres have been established, and others are in the planning stage, to conduct basic and applied research in a wide range of scientific disciplines.

Thus, there are three main sectors of research in Canada—government research, university research and research in industry. These three elements are covered in some detail in the following Sections and Subsections.

**Mechanism for the Federal Science Policy.**—In the federal sphere, the ultimate authority for policy on science resides in the Cabinet. To exercise this authority there was established by the National Research Council Act (RSC 1952, c. 239, as amended) a Cabinet committee known as the Committee of the Privy Council on Scientific and Industrial Research. This Committee comprises those Cabinet Ministers having departments with major scientific responsibilities and certain other Ministers who have an indirect concern with scientific affairs. These federal departments and agencies advise the Privy Council Committee on the scientific aspects of their own departmental responsibilities and on the organization and support of research required for their own purposes. For many years, the National Research Council, on the other hand, advised the Committee on general science policy, particularly on research in the universities, in industry and in fields not specifically the responsibility of the departments or agencies. Then, in 1949, the Privy Council Committee broadened the structure of its advisory mechanism by the addition of an advisory body of senior officials to which it might turn for joint advice on the formulation and conduct of government scientific policies.

In 1964, a move was made toward integration and stimulus of research with the creation of a Science Secretariat in the Office of the Prime Minister. Established as a result of the recommendations of the Royal Commission on Government Organization and those of Dr. C. J. Mackenzie, former President of the National Research Council, the Secretariat has the task of assembling, digesting and analysing information related to the Government's scientific and technological activities, including their interrelationships with university, industrial and provincial scientific establishments. In 1966, the Science Council of Canada was established, drawing its professional and administrative support from the Science Secretariat. Exclusively advisory, the Council will call for intensive studies of science and technology in Canada, serving as a focus for information and advice useful to the people of Canada in formulating policies and plans for the future. It will delineate

in broad terms for the first time those fields of science and technology that may be expected to contribute most to the country's economic and social objectives and indicate how their development can best be organized and supported. Membership is drawn from industry, the universities and government.

### Section 1.—The National Research Council of Canada\*

Organized research in Canada on a national basis dates from 1916 when the Government of Canada established the National Research Council. From an initial budget of \$91,600 (only \$50,375 was actually expended) to one of \$74,000,000, the Council has expanded until now it has some 45 Associate Committees studying a wide range of problems, supports the research efforts of 2,500 university scientists and awards 1,900 scholarships, bursaries and postdoctorate fellowships.

The planning and integration of research work, organization of co-operative studies, postgraduate training of research workers, and prosecution of research through grants to university professors formed the basis of the Council's work from 1916 to 1924. As early as 1918, the creation of a central research institute to carry on research in pure science in relation to standards of measurement, quality and composition of material, and research in science applied to the industries of Canada, had been urged and a special committee of Parliament endorsed the proposal. Temporary quarters were secured in 1925 and research on magnesian refractories for steel furnaces was carried out so successfully that an industry established during World War I was re-established on a large scale. As a result of this achievement, the Government in 1929-30 provided funds for new research facilities. The National Research Building on Sussex Drive in Ottawa was opened in 1932 and in 1939 construction was begun on an aerodynamics building located on the Montreal Road, just east of the city. This site now comprises some 400 acres and houses most of the Council's laboratories. A prairie Regional Laboratory built on the campus of the University of Saskatchewan in Saskatoon has been in operation since June 1948 and an Atlantic Regional Laboratory on the campus of Dalhousie University in Halifax since June 1952.

Under the terms of the Research Council Act, the Council has charge of all matters affecting scientific and industrial research in Canada that may be assigned to it by the Committee of the Privy Council on Scientific and Industrial Research. In discharging these responsibilities, the Council may undertake, assist or promote research. Its duties include the utilization of Canada's natural resources; the improvement of industrial processes and methods; the discovery of processes and methods likely to expand existing industries or to develop new ones; the utilization of industrial wastes; investigation and determination of physical standards, methods of measurement, and fundamental properties of matter; the standardization and certification of scientific and technical apparatus used by government and industry; the determination of standards of quality for materials used in public works and government supplies; and investigation and standardization, at the request of industry, of industrial materials or products. As a service to Canadian science, the Council maintains scientific liaison offices in Ottawa, London, Washington and Paris. The liaison officers abroad also serve as scientific attachés in the Canadian diplomatic missions. The National Research Council Library, with holdings of more than 600,000 volumes in science and technology (including 12,000 journals and other serials), acts as the National Science Library of Canada (see also p. 377).

The Council's laboratories are organized in ten divisions and two regional laboratories, each with its own director. Six divisions are engaged in applied and fundamental studies in the natural sciences—biosciences, applied and pure chemistry, applied and pure physics and radiation biology. Four others are devoted chiefly to engineering work—building research, mechanical engineering, radio and electrical engineering, and the National Aeronautical Establishment. The two regional laboratories carry out research related to the

\* Revised by Joan Powers, Public Relations Office, National Research Council of Canada, Ottawa.



resources of the Prairie and Atlantic regions. A Medical Research Council, responsible for the support of medical research but functioning under the general administration of the National Research Council, was established in November 1960 (see p. 288).

The National Research Council consists of the President, two Vice-Presidents (Scientific), one Vice-President (Administration) and 17 other members, each of the latter group being appointed for a term of three years and chosen to represent industry, labour, and research in science and engineering. Many of the members are drawn from Canadian universities. The Council reports to the Committee of the Privy Council on Scientific and Industrial Research through a Minister designated by the Governor in Council for the purposes of the National Research Council Act.

The Council's 1966-67 budget, excluding the provision for the activities of the Medical Research Council, is about \$74,000,000, approximately \$29,000,000 of which is required for foundation work—scholarships and research grants in science and engineering. The remainder is used to operate the laboratories and to provide for the Council's industrial research assistance program. Of the Council's 2,760 employees, 788 are scientists and engineers.

**Links with Industry.**—The application of science to Canadian industry has always been one of the major concerns of the National Research Council. Since 1917, representatives of industry, government and the universities have co-operated, through NRC Associate Committees, in solving pressing industrial and economic problems. There is a constant flow of personnel and information between NRC laboratories and those of industry, and roughly 70 p.c. of the Council's own effort involves applied research intended for industrial use. Contract research on specific projects and a wide variety of testing and standardization work are undertaken. Inventions from NRC laboratories are carried through the patent stage, then made available for manufacture through Canadian Patents and Development Limited (see p. 146).

A most important activity of the Council is its Technical Information Service, which consists of field engineers who visit manufacturing establishments, and a staff of trained researchers in Ottawa who use the technical literature available through the Council's Library. Although all inquiries are handled, the Service is particularly interested in helping small firms with no research or information facilities. Free advice is given on all aspects of materials and processing, equipment, plant design and packaging and on such topics as wage incentives and inventory control.

Direct financial assistance for research performed by Canadian industry was begun by the Council during 1962. Under this arrangement the Council makes grants supporting long-term applied research and development work proposed and carried out by industry. Aid is given on a shared-cost basis, with industry supplying at least half the funds for any one project. Companies of all sizes, representing a wide range of industrial activity, are eligible for assistance and the companies retain all rights arising from the work. In 1965-66, at a cost of \$3,300,000, the Council supported 40 new research projects and 104 continuing projects in 90 Canadian firms. This work gave rise, also, to nearly 700 new research positions.

**Biosciences.**—The program of the Division of Biosciences covers practical problems related to the national economy and fundamental studies that may contribute useful information in such areas as agriculture, medicine and certain industries. Apparatus and techniques for preparing, preserving and storing food make up a large part of the applied work and particular attention has been given recently to food freezing, cold storage in jacketed rooms and refrigerated transport. Study and testing have continued on a process now widely used in industry for the immersion freezing of poultry, quality loss in poultry meat during freezing and refrigerated storage, and an improved cooling system for frozen food trucks. The physical and chemical reactions influencing coagulation in

evaporated milk during sterilization are being investigated. Microorganisms related to food are studied, particularly those that grow in cheese, in high salt concentrations and at low temperatures. A national culture collection of about 3,000 yeasts, bacteria and fungi is maintained.

Considerable effort is devoted to questions of animal and plant physiology. Studies of the mechanisms by which mammals, birds and man adapt to cold have provided important basic information on cell, muscle and metabolic activity, and help to explain practical problems such as the high death rate of newly born caribou. Fundamental plant processes such as translocation are investigated, and a study is being carried out on strains of blue-green algae believed responsible for cattle deaths. Plant fibres such as cellulose—the skeletal material of plants—and the structure and function of plant cell components are also examined.

Other studies involve fermentation mechanisms and enzymology, and the structures of proteins, polysaccharides and lipids. One group, among its other projects, is engaged in long-term statistical studies of protein variability in wheat, a factor that influences overseas wheat sales. The work has been expanded recently to include the effects of weather factors on protein content.

**Radiation Biology.**—The effect of radiation on living things, including people, is the subject of research in the recently organized Division of Radiation Biology. The Division will eventually be housed in a new building being erected in close proximity to the buildings housing the major applied Divisions of the Council. A variety of types of radiation will be used, including ultra-violet light, gamma rays, X-rays, electrons and fast neutrons. The physical, chemical, functional and statistical changes brought about by irradiation of pure chemicals, biochemicals (enzymes and macromolecules), cells, tissues, microorganisms, plants, animals and human or animal populations will be investigated. Studies will also be made of radiations arising within biological materials as well as those originating outside. Where possible, observations will be made of the effects of radiations delivered at widely differing dose rates.

**Applied Chemistry.**—The Division of Applied Chemistry is concerned with supplying new scientific information for the development of Canada's natural resources and chemical industries. Although formerly much of the work involved the solving of immediate specific problems, a larger part of the Division's effort is now being devoted to more basic studies. This avoids conflict with industrial laboratories and consultants and, in addition to providing fundamental information, often produces practical results. For instance, a long-term investigation on the contacting of fluids and solids—an operation vital to many chemical engineering procedures—has resulted in a successful commercial operation for drying grain. The same method can be extended easily to chemical reactions and to removing liquids from other materials.

Another long-term project of considerable industrial potential has concerned the factors responsible for the stability, or the destruction, of suspensions of solids in liquids and a method was devised for easily separating almost any suspended solid from the liquid surrounding it. This work has been expanded to include the separation of dissolved solids. It has been shown that virtually all dissolved salts can be removed from water by filtration through an appropriate medium, and tests with other materials are in progress. Then, too, the study of chemical reactions at very high temperatures—carried on over the past several years—has resulted in the successful preparation of a stable polymer that could not be produced by conventional means.

The eleven sections of the Division are: analytical chemistry, chemical engineering, colloid chemistry, high polymer chemistry, high pressure, kinetics and catalysis, metallic corrosion and oxidation, metallurgical chemistry, physical organic chemistry, hydrocarbon chemistry and textile chemistry. Much of the work falls under the general headings of petroleum or corrosion chemistry, in that several sections work on topics related to one of these fields.



**Pure Chemistry.**—The Division of Pure Chemistry has a small permanent staff which works in collaboration with about 50 young postdoctorate fellows from all over the world. The work consists of long-term fundamental investigations in physical and organic chemistry designed to provide new basic knowledge in chemistry.

The work in organic chemistry includes investigation of the structures of alkaloids, studies of the infrared spectra of steroids, and the synthesis of porphyrins and of compounds labelled with isotopes. Other sections deal with chemical kinetics and photochemistry, the study of the ionization potentials of free radicals by mass spectrometry, Raman and infrared vibrational spectroscopy, organic crystal semi-conductors, and the application of high resolution proton magnetic resonance techniques to the study of hydrogen bonding and other molecular interactions. Still others investigate the thermal properties of simple solids and imperfections in the bulk and the surface of alkali halide crystals, the heats of micellization by microcalorimetry, and the thermodynamics and stress-strain relationships associated with the absorption of fluids by active carbons. There is also a section interested in the chemistry of fats and oils.

**Applied Physics.**—The work in applied physics is divided between research in fields of physics deemed most likely to contribute in a practical way to the Canadian economy and research to improve the accuracy and precision of fundamental physical standards on which all measurements are based. All the fundamental physical standards for Canada are the responsibility of the Applied Physics Division, which has primary standards equal to any in the world in the fields of mass, length, time, electricity, temperature, photometry and radiation. The sections of the Division are: acoustics, diffraction optics, electricity, heat and solid state physics, instrumental optics, interferometry, mechanics, photogrammetric research, radiation optics, and X-rays and nuclear radiations.

Examples of specific projects under way include a study of physiological noise and its relationship with the threshold of hearing, resulting in the development of a new probe microphone which should find wide application in sound measurement; new precision and accuracy is envisaged for audiometers of great importance in connection with hearing loss in industry and elsewhere; researches directed toward improving the resolving power of optical systems, the design of a hydrogen maser offering potential as a frequency standard for defining time, measurements on various metals and ceramics aimed at elucidating the mechanism of heat transfer at high temperatures, the establishment of an international standard neutron source, and investigation and application of the very intense and very monochromatic radiation emitted by gas lasers. Several of the Division's developments are being produced commercially; among these are noise-excluding ear defenders, a revolutionary analytical plotter for making maps from aerial photographs (available in two models—one for military and the other for civilian use), six- and five-figure potentiometers, a precision direct reading thermometer bridge, an instrument for measurement of resistance to a precision of one part per million, and a new instrument for measuring more accurately and quickly electrical voltages of up to 3,000 volts.

**Pure Physics.**—Investigations are under way on cosmic rays and high-energy particle physics, solid state physics, plasma physics, spectroscopy, and X-ray diffraction. The work is on fundamental problems which do not have immediate application but advance the frontiers of knowledge and supply the basis for further progress in the applied fields. Important advances in the study of cosmic rays and energetic particles are being made by means of a specially designed instrument package operating aboard the Canadian earth satellite *Alouette II*. The package is sending back vital new information about the Van Allen radiation belts and about the artificial belts created by atomic explosions.

The solid state group studies the electrical, thermal and mechanical properties of metals and semi-conductors especially at very low temperatures. The plasma physics group, established in 1962, has already made an important contribution by observing the scattering of a ruby-maser beam by a plasma. This study leads to a determination of



electron temperature and electron concentration. In the spectroscopy group, the structures of atoms and molecules are investigated by means of their microwave, visible and ultra-violet spectra, and considerable work has been done on optical masers.

The X-ray diffraction laboratory undertakes fundamental work in molecular and crystal structure and identification problems for government laboratories. Two of the major projects concern narcotics and vanadium minerals. X-ray diffraction methods are extremely valuable for identification purposes as they are non-destructive and require only very small amounts of material.

**Building Research.**—The provision of a comprehensive research service for the construction industry of Canada is the primary concern of this Division. The research program therefore covers all aspects of building design, building materials and components, fire research and studies in soil, snow and ice mechanics. Regional stations engaged in research and information are maintained in Halifax, Saskatoon, Vancouver and Norman Wells. The Division serves as the technical research wing of the Central Mortgage and Housing Corporation.

Examples of Division projects are the behaviour of concrete aggregates and lightweight concretes; the materials and techniques of masonry construction and plastering; atmospheric corrosion of metals; paint and acoustics research; and examination of the performance of walls, windows, chimneys and domestic heating systems. Other studies involve humidity in buildings, air-conditioning design data, snow and wind loads on structures, the properties of various soil types including permafrost and muskeg, and the effects on buildings of ground vibrations caused by earthquakes. A unique fire research laboratory provides facilities for all types of fire resistance, fire prevention and fire fighting tests.

As the Division concentrates on building problems peculiar to Canada, much of the work concerns the performance of buildings and building materials in cold weather. In this connection, double-glazed windows and lightweight metal and glass curtain walls, used increasingly in modern buildings, have been examined. Special studies have been made to improve winter building techniques and there is a section devoted to problems of building in the Far North.

The efforts of the Division have included educational work in a number of directions in order to alert the design professions and manufacturers to design-features that should be avoided. Similar liaison exists with federal and provincial public works departments and some important field studies have been made of some new provincial buildings.

Many results of the Division's research are expressed in the National Building Code, an advisory document of building standards now used by municipalities accounting for about three quarters of the total urban population of Canada. The Division also provides the secretariat and considerable technical assistance to the Associate Committee that produces the Code on behalf of the Council.

**Mechanical Engineering.**—This Division works mainly in the fields of mechanics, hydrodynamics (hydraulic engineering and naval architecture) and thermodynamics. Extensive testing and specification work is undertaken for a variety of industries and for government departments. Much of the work consists of continuing projects related to land, sea and air transportation.

The mechanics activities include mathematical analysis and computation, the development of instruments and servomechanisms, and research on mechanical devices such as gears. One group, working in the field of bio-medical engineering in collaboration with surgeons, has devised a mechanical aid for the treatment of patients with curvature of the spine; a blood cooler used experimentally with animals promises to extend for an hour or more the length of time a surgeon can conduct a brain operation without blood flow through the brain.

In hydraulics, a number of investigations and models have been made for improving Canadian harbours. The successful development of the Jarlan perforated breakwater and

its highly successful use at Baie Comeau have set in motion investigations as to its applicability to other harbours in Canada and this interest is being augmented by inquiries concerning the breakwater from all over the world. Also, a promising scheme has been developed for reducing silt accumulation in harbours by wave energy. The ship laboratory has continued its studies on propeller, rudder and hull design and performance.

Railway work is devoted mainly to locomotives and the riding qualities and mechanical behaviour of freight cars. Improved braking systems and cheaper fuels have been investigated and a study of the dynamics of long trains and of means of reducing damage has been initiated by Canadian railways in co-operation with NRC. A long-term study is being made of the possible use of gas turbines in locomotives.

The application of gas turbines to aircraft taking off and landing vertically is being explored, together with the thermodynamic, aerodynamic and control problems that this type of aircraft involves. Considerable research is being done on the behaviour of lubricants at high pressures and that of gases at extremely high temperatures.

**National Aeronautical Establishment.**—The National Aeronautical Establishment conducts aeronautical research to meet the needs of military and civil aviation, working in co-operation with the Canadian aircraft industry; it also carries out its own research program. Its studies therefore centre around problems of aerodynamics, aircraft structures and materials, and flight mechanics. It has the only development wind tunnel facilities in Canada and is thus equipped to handle most of the industrial or military aircraft developments of the foreseeable future. Aerodynamics research from low speeds up to about  $4\frac{1}{2}$  times the speed of sound is carried out in the wind tunnels; considerable attention is being given at present to low-speed problems of vertical and short take-off aircraft. Other studies include work on the aerodynamic characteristics of high-thrust propellers, on wings with submerged fans and on wings immersed in powerful slip-streams. The research on structures and materials involves investigation of aircraft accidents, the theory of structures, fatigue and fracture, flight loads statistics and aircraft hydraulics. The flight mechanics program covers research on flight safety and flying stability and control, the development of a crash position indicator for locating crashed aircraft, atmospheric physics, anti-submarine magnetometry, and the avoidance of aircraft collisions.

A growing and highly diversified program of assistance to smaller industries is developing, the work relating mainly to product development, product improvement or testing. Concerning aircraft utilization, efforts have been directed toward those areas of national activity where aerial methods might offer economies in cost or improvements in effectiveness, such as agricultural applications, forest fire fighting, aerial logging, high sensitivity magnetic surveys, precipitation physics, and studies of atmospheric turbulence.

**Radio and Electrical Engineering.**—The work of this Division includes engineering problems of interest to Canadian industry and fundamental research in electrical science. The Division co-operates with the Armed Services and associated industries in designing, producing and evaluating new equipment.

The engineering program includes studies of corona loss and radio interference from extra-high-voltage direct-current transmission lines, rocket telemetry, antenna development, electromedical instrumentation, electronic aids to navigation, and high-frequency standards. The Division maintains the best-equipped antenna laboratory in Canada and provides considerable assistance to Canadian industry in the development and manufacture of new antennas and radomes. Examples of recent developments by the Division are a compact transistorized marine radar for use by pleasure craft and fishing vessels, an underwater crash position indicator for locating submerged aircraft, an area display electrocardiograph showing the time variation of heart voltage between 70 points on the body, and a creative tape recorder much in demand by electronic music studios. A highly mobile counter-mortar radar designed by the Division went into commercial production in 1961.

Fundamental studies are carried out in the fields of radio astronomy, upper atmosphere research, electron physics, and solid state physics. At the Division's radio observatory in Algonquin Park, Ont., a radiotelescope having a parabolic reflector 150 feet in diameter went into operation in mid-1966.

**Space Research Facilities.**—In 1966, the National Research Council took over from the U.S. Air Force's Office of Aerospace Research the Churchill Research Range at Fort Churchill, Man., and placed it under its newly formed Space Research Facilities Branch. The Range, which is being operated for the joint benefit of Canadian and American scientists under joint Canadian-American funding, is capable of launching many kinds of sounding rockets and balloons carrying scientific experiments to investigate the earth's upper atmosphere. Associated ground-based instruments are specially designed to study the aurora borealis by photographic and spectrophotometric methods.

The Space Research Facilities Branch has also taken over the work previously carried out in the Radio and Electrical Engineering Division to convert scientific experiments into hardware suitable for rocket payloads. This engineering work on behalf of scientists in the National Research Council and in Canadian universities will be done primarily by industrial contracts and includes selection and procurement of suitable rockets. The Branch also operates a Minitrack satellite-tracking and data-reception station near St. John's in Newfoundland; this activity is carried out on behalf of the National Research Council of Canada and the National Aeronautics and Space Administration of the United States.

**Atlantic Regional Laboratory.**—The Atlantic Regional Laboratory is engaged in practical and fundamental studies related to the resources and industries of the Atlantic Provinces. The Laboratory offers advice and assistance to local industries and government departments and, in addition, houses the Atlantic Regional Station of NRC's Division of Building Research. The research program includes investigations of the biochemistry and physiology of fungi, bacteria, marine algae, lichens, mosses and higher plants; of the chemistry of naturally occurring organic compounds; of the physical chemistry of inorganic reactions at high temperatures. Studies are under way on the application of scientific agriculture to the cultivation of seaweed and surveys promise to reveal new sources of supply to meet the future demands of this expanding industry. Extracts obtained from species such as Irish Moss, kelp and rockweed find more than 40 different uses in the food, pharmaceutical and textile industries and in agriculture.

A development of considerable significance was the establishment of a close working relationship with Dalhousie University at Halifax. Under the new arrangement, students acceptable to the University's Faculty of Graduate Studies may carry out research in the Atlantic Regional Laboratory, directed by Laboratory staff members holding unpaid appointments in the Faculty. The immediate aim of the scheme is to expand the facilities for graduate studies in the Atlantic region; the long-term objective is to help create a strong scientific background conducive to large-scale development by industry.

**Prairie Regional Laboratory.**—One of the aims of the Prairie Regional Laboratory is to develop wider uses for crops grown on the prairies by determining potential uses of crops now in production and by encouraging the production of new crops to meet specific needs. The Laboratory program is carried out by five sections: the physiology and biochemistry of fungi section, physiology and biochemistry of bacteria, plant biochemistry, chemistry of natural products, and the engineering and process development section. Research is therefore carried out on the properties and reactions of plant components, and on the biological, chemical and engineering processes for turning them into other compounds. The development of oil-seed crops as alternatives to seed crops has received considerable attention.



For some time, the Laboratory has studied major plant constituents such as carbohydrates, protein, starch, lignin and fibres. An example of this work is the definition of the chemical structure of several polysaccharides found in cereal grains and important in baking, milling and fermentation technology. Attention is also being given to minor plant constituents, such as phenols, flavonoids and terpenes, which are known to have fungicidal and germicidal properties. A laboratory has been set up for the systematic study of extractives from local plants and shrubs.

Developments from the Laboratory attracting commercial interest are: the production of feed supplements by direct use of microorganisms, and specific essential amino acids such as lysine; poly-hydroxy alcohols such as glycerol and arabitol; hydroxy fatty acids; and the possibilities of producing specific glyceride types using the enzyme systems of microorganisms. The Laboratory works in co-operation with the Canada Department of Agriculture to help maintain Canada's position as the world's leading exporter of rapeseed, used to produce cooking oils, dressings and oil for use in margarine and shortening. A group working in the field of mycology is concerned with the production of new chemicals, antibiotics, alkaloids and amino acids.

## Section 2.—Research in the Atomic Energy Field\*

**Recent Developments and Prospects.**—The first major fruits of Canadian atomic energy research now appear close at hand. The Hydro-Electric Power Commission of Ontario is constructing a multi-unit nuclear electric generating station at Pickering near Toronto. Each unit will generate 500 megawatts (1 megawatt = 1,000 kilowatts) and beginning in 1970 it is planned to bring into operation the first four units at yearly intervals. Estimates indicate that the power will be generated for less than four mills (0.4 cents) per kilowatt hour and will be competitive with that from other available types of thermal generating station. The Quebec Hydro-Electric Commission is also entering the nuclear field with a 250-megawatt prototype nuclear generating station of advanced design. Like the earlier CANDU (Canadian Deuterium Uranium) reactors, the design employs natural uranium as the fuel and heavy water as the moderator but the heat will be carried from the fuel by boiling ordinary water instead of by heavy water at a pressure sufficient to prevent boiling. The design is distinguished by the title CANDU-BLW-250 (Canadian Deuterium Uranium-Boiling Light Water-250 megawatts).

The first nuclear power demonstration (NPD) reactor, CANDU-PHW-20 (Pressurized Heavy Water-20 megawatts), at Rolphton, Ont., has shown clearly that capacity factors in excess of 80 p.c. throughout a full year can be achieved with this type of system. Fuel is routinely changed with the reactor at power and losses of heavy water are well within the economic limits. This reactor is now yielding useful information on the long-term behaviour of its components and is providing a training base for those who will staff the larger reactors now being built in Canada and abroad. The next reactor in the series is the 200-megawatt station at Douglas Point, Ont., which will be brought into operation in 1966.

Canadian heavy-water power reactors are also under construction in India and Pakistan. To meet the large demand for heavy water that these reactors necessarily entail, one plant to produce 200 tons a year is nearing completion at Glace Bay, N.S., and a site is being chosen for another that will produce 500 tons a year.

Although nuclear power is expected to restore the world market for uranium, the major build-up is expected in the 1970s. The high energy yield from the fission of uranium is the key to economic nuclear power. The yield is so high that the cost of the raw uranium is a very minor component of the cost of electric power. It is about 5 p.c. of the total and may be contrasted with 50 p.c. or more paid for coal in some large conventional generating stations. The largest component in the over-all economy of nuclear power systems is reactor plant construction and a minor (10 p.c. to 15 p.c.) component is fuel fabrication.

\* Prepared (June 1966) by Dr. W. B. Lewis, Senior Vice-President (Science), Atomic Energy of Canada Limited, Chalk River, Ont.

In the past, the major atomic energy activity in Canada was uranium mining and refining for export in support of military uses. Circumstances have changed so greatly that the Government has announced a policy of no further exports for nuclear weapons but is encouraging export for peaceful purposes such as nuclear power subject to negotiated safeguards. It is also significant that since lower unit power costs result from larger stations, there is a new incentive for large utilities to export power from their systems and to interconnect centres of load by high voltage transmission even over long distances. Also, all users of electricity benefit from the new trend to lower rates through greater demand. The Canadian designs of nuclear power reactor appear capable of adapting to the largest capacities desired and of taking advantage of changes in the market value of natural uranium and of reprocessed fuel to reach even lower power costs as the scale of operations increases.

The first commercial food irradiator using cobalt-60 radiation has been put into service near Montreal, Que.

A major advance in instrumentation, precision gamma-ray spectrometry based on specially prepared germanium crystals pioneered at Chalk River, is revolutionizing many techniques, particularly isotope and element analyses by radioactivation by neutrons.

**Organizational Arrangements.**—Three Federal Government organizations have the basic responsibilities for atomic energy in Canada: (1) the Atomic Energy Control Board, responsible for all regulatory matters concerning work in the nuclear field; (2) Eldorado Mining and Refining Limited, with a double function as a producer of uranium and as the Government's agent for the purchase of uranium from private mining companies; and (3) Atomic Energy of Canada Limited, concerned with nuclear research and development, the design and construction of reactors for nuclear power, and the production of radioactive isotopes and associated equipment, such as cobalt-60 Beam Therapy units for the treatment of cancer, and large installations for the sterilization of medical supplies and other uses.

The Atomic Energy Control Board does not itself conduct research but it gives substantial grants to universities to further independent studies and to provide the equipment without which the universities would find it difficult to train the nuclear research workers of tomorrow. The National Research Council also has made grants in the atomic energy field; in 1965-66 they totalled \$1,600,000.

Eldorado operates research and development laboratories in Ottawa and uses them to support its uranium mining and processing at Beaverlodge in northern Saskatchewan and its refining plant at Port Hope, Ont. Eldorado co-operates with the Department of Energy, Mines and Resources, which carries out background research on the production and use of uranium.

Atomic Energy of Canada Limited (AECL) has an eleven-man Board of Directors, including individuals from power companies, private industry and the universities. The company's major plant, the Chalk River Nuclear Laboratories, is near Chalk River, Ont., and a second plant, the Whiteshell Nuclear Research Establishment, is near Pinawa in Manitoba. The company's Head Office and AECL Commercial Products are in Ottawa. AECL Power Projects and Prototype Design Engineering Division in Toronto direct the engineering of power reactors and nuclear generating stations and operate as consulting nuclear engineers. The design and construction of NPD, the demonstration plant, was carried out by collaboration between AECL, the Canadian General Electric Company Limited and Ontario Hydro. AECL Power Projects, with the assistance of Ontario Hydro, designed and constructed the Douglas Point station, which plant, by agreement, will be purchased by Ontario Hydro when it is in satisfactory operation. A similar arrangement between AECL and Hydro Quebec is expected to be used for the construction of the CANDU-BLW-250 station. The large units of the Pickering station are being built by Ontario Hydro using AECL Power Projects as consulting nuclear engineers. An Advisory Committee on Atomic Power Development keeps all other utilities fully informed of the



progress being made. This Committee, which was set up by the Federal Government in 1954, meets periodically to assess the economic prospects of nuclear power throughout the country.

Because of the great pace of technological development in nuclear power throughout the world, AECL devotes a major effort to collaboration with many organizations. These include industrial firms and the scientific and engineering departments of universities in Canada and, through foreign government agencies and several international organizations, many technical groups in other countries. For example, the Canadian General Electric Company has designed and constructed WR-1, an organic-cooled experimental reactor, for the Whiteshell Nuclear Research Establishment on a fixed price negotiated contract. The Canadian General Electric and Canadian Westinghouse companies are AECL's chief contractors for fuel element fabrication, and other work related to Canada's nuclear power program is carried out in collaboration with Shawinigan Engineering, Hawker Siddeley Canada Limited, Dilworth, Secord, Meagher and Associates, Montreal Engineering Company Limited and others. In general, AECL's policy is to stimulate the interest of private industry in the development of nuclear power so that these firms can take over construction of power plants when the time arrives, leaving AECL free for fundamental studies and developing new reactor concepts. For some years AECL expects to continue a consulting engineering role in the design of nuclear generating stations. AECL also lends general support to the nuclear and related studies of Canadian universities and lets contracts to the universities on specific problems.

To support their activities in this field, both industry and universities need ready access to information. This was one reason why industry set up the Canadian Nuclear Association, a body that has held a highly successful series of annual conferences at which both progress and the prospects for the future are reviewed. A commercially published magazine, *Canadian Nuclear Technology*, maintains the flow of general information and opinion. Detailed technical information is available principally from the library of the Chalk River Nuclear Laboratories, which lends about 500 items a month from its comprehensive collection of the world's nuclear literature. Information is also distributed from extensive depository collections at the libraries of the University of British Columbia, McMaster University and the National Research Council and from seven smaller collections located across Canada.

In the international field, close ties are kept with the United States Atomic Energy Commission (USAEC) and the United Kingdom Atomic Energy Authority, both of which have representatives permanently at Chalk River. There is an agreement with the United States for co-operative work on heavy-water-moderated reactors; it provides for the free exchange of all technical data in this field and a commitment by the United States to undertake research and development related to reactors of Canadian design. Collaboration has also been established with the International Atomic Energy Agency, the Organization for Economic Co-operation and Development, and Euratom, as well as with Australia, West Germany, India, Italy, Japan, Pakistan, Spain, Sweden, Switzerland, U.S.S.R. and, less formally, with Denmark, France and Norway. In India, a major experimental reactor—the Canada-India Reactor—similar to NRX at Chalk River was constructed and was formally inaugurated in January 1961.

A 200-megawatt plant similar to that at Douglas Point is being constructed in India on a co-operative basis, known as the Rajasthan Atomic Power Project (RAPP). India has announced plans to install a second similar unit on the same site and two more units on another site near Madras. Pakistan has entered into an agreement to purchase from the Canadian General Electric Company a 137-megawatt station for the Karachi area.

**Research and Research Facilities.**—At the Chalk River Nuclear Laboratories, basic and applied research is carried on by about 200 professional scientists and engineers supported by 300 technicians devoted to research in nuclear physics, nuclear chemistry, radiobiology, reactor physics, radiation chemistry, environmental radioactivity, physics



of solids and liquids, and other subjects, using as their primary facilities the two major reactors, NRX and NRU, the auxiliary reactors, ZEEP, PTR and ZED-2, the tandem Van de Graaff accelerator and analytical facilities such as a precision beta-ray spectrometer, mass spectrometers, electron microscopes, multi-channel pulse analysers, automatic recorders, and analogue and digital electronic computers.

Basic research is carried on in many fields, especially that of the structure of atomic nuclei and of the interactions of neutrons, not only with individual nuclei but also with liquids and crystalline solids, particularly those involving energy transfer. For nuclear structure studies, the tandem Van de Graaff has made pioneer work possible by providing multiply charged ions of precisely known energy and direction. It has proved possible to produce nuclei in specific energy states by different routes and to identify and analyse the states, thereby deducing the spin and other characteristics and discovering, for example, three correlated series of rotational states in the nucleus neon-20. Not only is this important to a basic understanding of nuclear structure but it also finds application in unravelling the complex of nuclear reactions responsible for the genesis of nuclei in the interior of stars.

Studies of neutron interactions with matter are made possible by the intense beams of neutrons available from the NRU reactor. By monitoring the neutrons in cosmic radiation, it has been possible to find correlations with the occurrence of solar flares and contribute to the recent advances of knowledge of phenomena in interplanetary space. Isotope techniques have brought about revisions in the basic theory of chemical reactions induced by radiation. This basic research may find a useful application in the technology of using an organic liquid as coolant in nuclear power reactors.

The research facilities of the NRX and NRU reactors have continued to attract individual scientists as well as teams from universities and from other countries. The international study on the scattering and slowing of neutrons by moderators and other materials of interest at high and low temperatures was recently drawn successfully to a close. More facilities for studying radiation damage under closely controlled conditions are coming into use. These include devices for measuring creep of metals under stress and fast neutron bombardment at controlled temperatures.

The first major installation at the Whiteshell Nuclear Research Establishment (WNRE) is the organic liquid-cooled, heavy-water-moderated experimental reactor WR-1, commissioned in 1965. Under a special agreement the facilities of this reactor are now shared with the USAEC and their contractors. The facilities are specially suited for development work toward large reactors of a similar type that have been selected by the USAEC as promising for their water desalination program. The facilities of WR-1 are quite extensive and can be applied to development work also with other coolants such as boiling water and superheated steam. Laboratory facilities at WNRE are specially suited to studies of the effects of radiation and a wide program from molecular biology to radiation chemistry and reactor engineering is envisaged. A new tandem Van de Graaff rated at 10,000,000 volts on the terminal has replaced the former machine at Chalk River that attained 7,000,000 volts. The growing use of lithium-drifted germanium detectors for precise measurements of gamma-ray energies has led also to more extensive electronic digital data-processing.

**Nuclear Power Development.**—Much of the success of the CANDU series of reactors is attributable to the engineered design of the fuel tested in many experimental irradiations under conditions that are more exacting than normal service. The fuel is uranium dioxide specially prepared from natural uranium entirely in Canada. Strings of pellets of sintered oxide are charged into thin-walled zirconium alloy tubes. The tubes deform slightly in service in a determined manner that has proved satisfactory. The migration of the fission product atoms, especially the gases, has been extensively studied and satisfactory operating conditions established for the full energy yield of 9,000 megawatt-days per ton of uranium and more. This energy yield is so great that there is no need to make provision for processing the spent fuel and the prospective fuelling cost is less than

one mill (0.1 cent) per kilowatt hour of electricity. This cost may be compared with about three mills from coal at \$8 per ton. The low fuelling cost is most important because Canada has access to such an abundance of coal, oil and natural gas that the competitive cost level for thermal power is lower than in many other countries.

The low fuelling cost derives as much from the details of the design proposed as from the general type of reactor chosen. Some of the important features seem worthy of mention. At Douglas Point the first full-scale plant will generate 220 megawatts with a steam-cycle efficiency of 33.3 p.c., so that the reactor has to supply 660 thermal megawatts to the steam-raising plant. The reactor is essentially a tank of heavy water, 20 feet in diameter and 16.5 feet long, lying horizontally. It is penetrated by 306 fuel channels parallel to the axis on a nine-inch-square lattice. Each channel is a zirconium-alloy pressure tube of 3.25 in. inside diameter and about 0.16 in. thick. The fuel consists of bundles of 19 rods, 0.6 in. in diameter and 19.5 in. long, made of dense uranium dioxide in thin zirconium-alloy tubes. Heat is taken from the fuel directly by heavy water that passes at 560°F to the steam boiler, where normal water is raised to saturated steam at 483°F and 38 atmospheres. These details show that the design represents a considerable advance over that originally conceived in 1956, and the improvement bears promise that continued progress will lead to costs well below the economic target. As examples of the advance, it may be noted that, for the same electric power output, the total heat production of the reactor has been brought down from 790 to 700 megawatts, the efficiency of the steam cycle itself has risen from 27.9 p.c. to 33.3 p.c., and the length of fuel rod has been reduced from 86 to 30 kilometers. The prospective fuelling cost has dropped from 1.85 mill/kwh. to 1.0 mill/kwh. On the other hand, no over-all reduction has been achieved in the capital cost estimates which remain in the range of \$300 to \$400 per electrical kilowatt for the whole plant. However, a reduction is expected now that manufacturing experience has been gained which can be used in future construction. Even greater reductions in unit power cost will result at Pickering from the increase in the capacity of the reactor to 500 megawatts of electricity and the incorporation of several such units in a large generating station.

An evaluation was presented at the third United Nations Conference on the Peaceful Uses of Atomic Energy at Geneva in September 1964 of cost estimates of several preliminary designs of large power reactors using heavy water as moderator. These designs represented types for which development work was well advanced. The differences lie in the choice of heat transfer fluid or 'coolant' and the steam cycle. Basically there are three coolants—heavy water, ordinary or light water, and an organic liquid. The heavy water could be under pressure to prevent boiling or to allow some boiling. Light water would have to boil or be in the form of 'fog' or 'wet steam'. The organic liquid must not boil. All types have excellent economic promise and it was decided to develop the boiling light water type chiefly for two reasons. By taking the steam direct to the turbine a boiler or heat-exchanger is eliminated and the efficiency is raised. The second advantage is a relaxation of the strictness of control of leaks needed with hot heavy water, both because of its cost and because of the toxicity of the tritium it contains. Some development of the organic liquid system continues under a new agreement with the United States in support of its program to develop such a system for water desalination as well as for power.

Most of this development work centres on establishing the properties of materials for the arduous environment of high temperatures, and radiation effects affecting the solids and the fluids. In ordinary engineering, the three parameters of stress, temperature and time lead to complex analyses, especially when corrosion and atomic diffusion are active. In reactors, irradiation is a fourth and major parameter. Thus, materials development still calls for a major scientific and engineering program of studies.

CANADIAN NUCLEAR REACTORS IN OPERATION, UNDER CONSTRUCTION OR UNDER DETAILED DESIGN

Name	Location	Date of Start-up	Power	Fuel	Moderator	Coolant	Use
Zero Energy Experimental Pile (ZEEP).....	Chalk River, Ont.	1945	100 w.	Natural uranium metal or oxide	Heavy water	—	Lattice experiments
National Research Experimental (NRX) <sup>1</sup> .....	Chalk River, Ont.	1947	42, 000 kw.	Natural uranium oxide and enriched uranium alloy	Heavy water	Ordinary water	Research, engineering tests and isotope production
National Research Universal (NRU).....	Chalk River, Ont.	1957	90, 000 kw. to 120, 000 kw.	Enriched uranium alloy	Heavy water	Heavy water	Research, engineering tests and isotope production
Pool Test Reactor (PTR).....	Chalk River, Ont.	1957	100 w.	Enriched uranium alloy	Ordinary water	Ordinary water	Reactivity and absorption measurements
Toronto University Sub-critical Reactor.....	Toronto, Ont.	1958	—	Natural uranium metal	Heavy water	—	Research and teaching
McMaster Nuclear Reactor (MNR).....	Hamilton, Ont.	1959	2, 000 kw.	Enriched uranium metal	Ordinary water	Ordinary water	Research
ZED-2.....	Chalk River, Ont.	1960	100 w.	Natural uranium metal oxide or carbide	Heavy water	—	Lattice experiments
Nuclear Power Demonstration (NPD).....	Rolphinton, Ont.	1962	20, 000 kw. (electricity)	Natural uranium oxide	Heavy water	Heavy water	Power demonstration
Whiteshell Reactor No. 1 (WR-1).....	Pinawa, Man.	1965	40, 000 kw. at first	Enriched uranium oxide	Heavy water	Organic liquid	Research and engineering tests
CANDU-PHW-200 <sup>2, 3</sup> .....	Douglas Point, Ont.	1966	200, 000 kw. (electricity)	Natural uranium oxide	Heavy water	Heavy water	Power
Karachi Nuclear Power Plant (KANUPP)...	Karachi, Pakistan	1970	137, 000 kw. (electricity)	Natural uranium oxide	Heavy water	Heavy water	Power
CANDU-PHW-500 (several reactors) <sup>2</sup> .....	Pickering, Ont.	1970	500, 000 kw. (electricity) each	Natural uranium oxide	Heavy water	Heavy water	Power
CANDU-BLW-250.....	Pointe aux Roches, Que.	1971 proposed	250, 000 kw. (electricity)	Natural uranium oxide	Heavy water	Ordinary water boiling	Power

<sup>1</sup> NRX is essentially duplicated in the Canada-India Reactor, near Bombay, India, which started up in 1960.

<sup>2</sup> The CANDU-PHW-200 design is also employed in the Rajasthan Atomic Power Plant in India, scheduled to start up in 1969.

<sup>3</sup> CANDU-PHW stands for "Canadian Deuterium Uranium-Pressurized Heavy Water".



### Section 3.—Space Research in Canada\*

The interests of Canadian scientists engaged in space research continue to be mainly in the field of aeronomy with particular, though not exclusive, emphasis on the high-latitude atmospheric and magnetospheric phenomena which are now generally believed to be related to the various disturbances on the sun. Canada, with its large land mass extending on both sides of the auroral zone, is ideally located for studies of medium- and high-latitude atmospheric phenomena and Canadian scientists have long been active in this exciting field. While many of the older programs of ground-based observations are still of great importance and are being carried out, the new measurements from satellites and rockets are making a significant contribution to knowledge of solar-terrestrial relations and in the next few years the importance of these studies using the new space techniques will increase.

The satellite program of the Defence Research Board, carried on in collaboration with the United States National Aeronautics and Space Administration (NASA), continues to form a major part of the Canadian space activities. The Canadian satellite 1962 Beta Alpha (*Alouette*), which was launched on Sept. 29, 1962, is still in orbit. Its instruments are functioning satisfactorily and there is every indication that it will continue to operate and send back scientific data for many months to come. The satellite carries a number of experiments but its main objective is the sounding of the ionosphere from above. The ionosphere is the diffuse layer of highly conducting gas lying between heights of about 60 to 300 miles. It reflects radio waves over a wide band of frequencies and is of great practical importance for communications. The underside of the ionosphere has been studied for many years by the technique of sending a short pulse of radio waves up from the ground and examining this pulse after it had been reflected back from the ionized regions. The satellite *Alouette*, however, was the first spacecraft to provide scientists with a continuous sounding of the ionosphere from above.

Other instruments carried by the satellite enable studies to be made of radio waves from outer space and very low frequency electromagnetic waves whose propagation is influenced by the earth's magnetic field. There are also a number of detectors to study cosmic rays, energetic particles in the Van Allen radiation belts and the artificial radiation introduced by high-altitude nuclear explosions. Data are transmitted from the satellite to the ground stations in several countries around the world and the magnetic tape records are sent to Ottawa for analysis. Scientific results to date have been most gratifying and the satellite measurements have added greatly to knowledge of the earth's upper atmosphere.

The over-all design and construction of the spacecraft were carried out by the Defence Research Telecommunications Establishment. Some components were made by Canadian industry and the cosmic ray instruments were the responsibility of the National Research Council. The cost of the launching vehicle, the actual launching and much of the data recovery were undertaken by the NASA as part of its international co-operative program. This joint Canadian-United States program is continuing. On Nov. 29, 1965 the second Canadian satellite *Alouette II* was successfully launched by NASA from the Western Test Range in California. This spacecraft carries instruments similar to but more sophisticated than *Alouette I*. Its elliptical near-polar orbit has an apogee of 3,000 km., allowing measurements to be made over a much greater height range than previously. *Alouette II* is the first of four satellites to be built in Canada for the International Satellites for Ionospheric Studies (ISIS) series. These vehicles will be launched at about two-year intervals during the next five or six years.

The rocket-launching facility at Fort Churchill, Man., located almost under the belt of maximum auroral activity, has been very active; 17 Canadian rockets carrying scientific instruments have been launched since January 1964 as well as many United States rockets. The range has four launchers capable of handling the following rockets: *Arcas*, *Nike*, *Cajun*, *Nike Apache*, *Astrobe*, *Aerobee*, *Argo D-4* (*Javelin*) and the Canadian *Black Brant*

\* Prepared (June 1966) by C. Collins, Division of Pure Physics, National Research Council of Canada, Ottawa.

series. On Jan. 1, 1966, the National Research Council assumed responsibility for the management of the Churchill Research Range. This arrangement was formalized by a Canadian-United States governmental agreement of June 14, 1965, which provided for joint funding and use of the range and designated the National Research Council and the National Aeronautics and Space Administration as the responsible Canadian and American agencies. Operations at the range are carried out by a civilian contractor.

Rockets have a special role in the space programs because there is an important region of the upper atmosphere that is too low for satellite orbits and too high to be reached by balloons or aircraft. This is the region between heights of about 25 and 200 miles. Here are found the absorbing layers in the lower ionosphere which cause radio blackouts and here are detected the complex atmospheric processes which produce the visible aurora. Because the axis of the earth's magnetic field is tilted, the auroral zone sweeps down across Canada and Churchill lies almost in the middle of this zone. This region of the atmosphere is therefore of great interest and importance to Canadian scientists. For many years investigations were limited to ground-based radio and optical measurements but now rockets are being used to carry instruments right into the aurora. These measurements, *in situ*, of electron density, temperature and charged particles will ultimately lead to a proper understanding of the aurora and high-latitude disturbances.

Many of the rockets fired at Churchill are of Canadian design and development. These are the *Black Brant* rockets which were pioneered by the Defence Research Board and are now produced commercially in Winnipeg. The first in the series, the *Black Brant I*, was an experimental vehicle and is now obsolete. *Black Brant II* is a 17-inch diameter vehicle capable of carrying 150 lb. of payload to over 100 miles. *Black Brant III* is a smaller rocket, 10 inches in diameter which will lift 40 lb. to about 100 miles. *Black Brant IV* is a combination of *II* and *III* and will go to a height of about 600 miles. *Black Brant V* is an optimum design of the *II*. Most of the flights have been made with the *IIs* but the *IIIs* and *IVs* have been successfully flown and will be used to carry scientific instruments in the immediate future.

Along with the increased activity in Canadian space programs there has been a general broadening of interests. The Meteorological Branch of the Department of Transport (DOT) Meteorological Satellite Data Laboratory is conducting a program to produce applications of satellite observations to the problems of meteorology and ice reconnaissance. In the field of communications satellites, the DOT has a joint program with NASA in which Canada participates in the testing of such spacecraft as *Telstar*, *Relay* and *Syncom* and two experimental ground stations for the development and use of communication satellite systems are nearing completion at Halifax and Toronto.

Canadian universities have continued to be very active in the field of space research. Nine university groups have programs involving the instrumenting of rockets, balloons or satellites for upper atmospheric studies. The McGill University program of gun-launched vehicles in the Barbados known as HARP (High Altitude Research Program) has been carried on with considerable success. About 100 launchings were made in 1965. Improvements have been made to both the gun and the vehicles and successful measurements have been made of wind shears and atmospheric constituents in the 100-km. region. A gun and test range has been set up near Highwater, Que. This program is carried on in collaboration with the U.S. Army.

Much of the foregoing work is shared with Canadian industry. Civilian contractors are producing instruments and space vehicles for both Canadian and foreign experimenters. In some programs, such as the *Alouette* satellite and the development of *Black Brant* rockets, industry is playing a major role. Other work of great importance for the space programs, such as fundamental research on materials and in plasma physics, is also being carried on in industrial laboratories.



## Section 4.—Research in Geophysics and Astronomy

In this edition of the Year Book, research in the field of geophysics is covered in Chapter I under the heading of Geology and Economic Minerals of Canada, pp. 30-32. The following item on this subject gives brief additional data on current (1966) projects and facilities. A special article on Astronomy in Canada, appearing in the 1965 Year Book at pp. 47-55, indicates in some detail the advances made in astronomical research and educational facilities; the write-up on p. 400 mentions the highlights only.

**Geophysics.\***—Geophysics—the study of the earth, including the oceans and atmosphere by the methods of physics—embraces a number of fields, each a major science in itself, such as geodesy, seismology, terrestrial magnetism, meteorology, oceanography and hydrology. Work in geophysics in Canada is carried on by a number of Federal Government departments, some provincial governments, nearly all universities and by companies engaged in geophysical prospecting for oil or minerals.

Currently, in the field of seismology, the 25 seismograph stations operated by the Dominion Observatory, with the co-operation of universities in several cases, provide good coverage of the country for the recording of earthquakes; an additional station is being constructed at Suffield, Alta., by the Defence Research Board. The regular stations are supplemented by a special array of detectors at Yellowknife, N.W.T., which is operated by the Dominion Observatory as part of a world net of highly sensitive detection stations for nuclear explosions.

Measurements of both the gravitational and magnetic fields of the earth were extended during 1965-66 over land areas by the Dominion Observatory and the Geological Survey, and over the oceans by the Bedford Institute of Oceanography. These measurements provide information that is extremely useful in the study of concealed geological structures. Recent projects have included an intensive survey of Hudson Bay, which may be the site of a considerable accumulation of sedimentary rocks and therefore of interest in petroleum exploration, and the measurement of the magnetic field over the north Atlantic Ocean by airborne magnetometer. Because the north magnetic pole is located in Canada, studies of magnetic disturbances and their relation to conditions in the upper atmosphere are of importance in Canadian geophysical research. The National Research Council, on Jan. 1, 1966, assumed control of the rocket range at Churchill, Man., which was built by United States agencies (see p. 390). This facility is now available for both government and university research. McGill University has extended its program of launching experimental rockets from guns. A most interesting development has been the discovery that important information can be obtained by simultaneous measurements at "conjugate points", similarly located with respect to the north and south magnetic poles. For the conduct of this work, the National Research Council has constructed a laboratory at Great Whale River, Que., which is conjugate to Byrd Station, Antarctica.

The Canadian program for the International Hydrological Decade, a ten-year study of the world's freshwater resources, has been developed in detail. Experimental basins across the country have been selected for the observation of the effects of changes in surface features on the amount and quality of ground water.

Meteorology includes not only the routine forecasting carried out principally by the Meteorological Branch of the Department of Transport (see p. 75), but also research in special problems by the Branch and by at least 12 university groups. These problems include controlled experiments in weather modification, the mechanics of hail formation, and micrometeorology, which is the detailed investigation of meteorological conditions in regions of small extent.

\* Prepared by Dr. G. D. Garland, Geophysics Laboratory, University of Toronto, Toronto.



During 1965-66, geophysical exploration for oil, chiefly by means of seismic waves from small explosions, was carried out by several companies in Western Canada and also offshore in the Pacific and in the Atlantic Grand Banks area. Prospecting for minerals by magnetic and electromagnetic measurement continued in many areas, and was directly responsible for the discovery of a new lead-bearing orebody in the Pine Point area of the Northwest Territories.

**Astronomy.\***—Modern astronomical research is based on observations secured with complex optical and radio telescopes. The major centres of this research in Canada have developed within the Federal Government and at a few universities. Research in optical astronomy began early in this century at the Dominion Observatory, Ottawa, and this was followed by the construction of larger telescopes at the Dominion Astrophysical Observatory, Victoria, and the David Dunlap Observatory of the University of Toronto. Other Canadian universities teaching astronomy include the University of Western Ontario, Queen's University, the University of Waterloo, the University of Saskatchewan, the University of British Columbia and Victoria University. Some of these universities have their own small observatories. A new observatory, commemorating the visit of Her Majesty Queen Elizabeth II to Canada in October 1964, is under construction on Mount Kobau in southern British Columbia. It will be equipped with a large reflecting telescope 150 inches in diameter, in addition to smaller telescopes, and will be a national observatory available to astronomers throughout the country. Completion of the large telescope is scheduled for about 1973.

Canada first entered the field of radio astronomy, the study of radio emissions from beyond the earth, in 1946 when the National Research Council began its study of solar radio waves. Radio astronomy has expanded rapidly and there are now radio telescopes operated by the University of Toronto, by Queen's University, by the Dominion Observatory near Penticton, B.C., and by the National Research Council at a large observatory in Algonquin Park, Ont., where a steerable radio telescope 150 feet in diameter began observations in 1966. An 84-foot parabolic telescope and two large arrays of antennas are in operation at the Penticton site.

Canadian astronomers are engaged in various specialized fields of research. In the study of the solar system the sun has been studied for many years by both optical and radio techniques with emphasis on solar flares and other phenomena which affect the environment of the earth. Solar eclipses in which the path of totality crosses Canada have been observed whenever possible. Only minor attention has been devoted to study of the planets but major efforts have gone into meteor research. Both photographic and radar equipment are employed in this work and the study of meteor spectra and radar echoes from meteor trails have been particular specialties. There is an increasing interest in the related field of meteorites and Canada has figured prominently in the study and interpretation of old craters caused by the impact of huge meteorites.

Stellar astronomy has been the largest single field of Canadian astronomy. One aspect of this is the accurate determination of the positions and motions of stars in the sky. The Dominion Observatory is continuing an active program of positional astronomy aided by new and highly specialized instruments. The large telescopes at Victoria and Toronto have been used primarily for spectroscopy, one of the major tools of astrophysics. Several programs have been completed in which large groups of stars have been studied individually to determine their true luminosities and motions in the line of sight. The results have then been used for research on the structure of the earth's Milky Way galaxy. From spectroscopic studies of certain types of close double stars, information on such properties as the size, mass, density and temperature of individual stars is secured. Stars whose light varies in intensity have been studied by photography for many clusters of stars and are also studied by photoelectric devices mounted on the telescopes at Victoria, Toronto and the University of Western Ontario.

\* Prepared by Dr. Ian Halliday of the Dominion Observatory, Ottawa.

Although the optical telescopes in Canada have not been used for extragalactic research, many of the stronger sources in the field of radio astronomy are now known to be exceedingly distant objects far beyond the stars of the earth's galaxy. Canadian radio telescopes are, and will continue to be, engaged in the observation of such sources. At the same time they are also involved in the study of clouds of gas between the stars of the Milky Way system and this work complements the knowledge gained from spectroscopic research with optical telescopes. The large size of the Queen Elizabeth II telescope planned for Mount Kobau will guarantee Canadian astronomers an opportunity to become active in all fields of extragalactic astronomy and will provide essentially complete facilities for astronomical research in Canada.

## Section 5.—Other Scientific and Industrial Research Facilities

This Section outlines research facilities and activities other than those covered in Sections 1 to 4—various federal departments and agencies, provincial organizations, universities and industry. The first three types of institutions—federal, provincial and university—have, of course, an interest in problems of industrial significance. As already stated, although many Canadian industries now possess research facilities—some of them quite extensive—much of the industrial research to date has been done under government auspices.

### Subsection 1.—Federal Organizations

Research activities in the various Federal Government departments and agencies have expanded rapidly, at first because of the need for speeding up the production of raw materials, which were for many years the basis of Canada's export trad., and later because of increasing interest in the processing of raw materials, the necessity of meeting the needs of national defence and the developing consideration for many human and resource requirements. In addition to the activities of the National Research Council, Atomic Energy of Canada Limited and the Department of Energy, Mines and Resources dealt with in Sections 1 to 4, federal agencies involved in research include the Departments of Agriculture, Forestry and Rural Development, Fisheries, other Branches of the Energy, Mines and Resources, National Defence, National Health and Welfare, and Indian Affairs and Northern Development.

The scientific work of the Department of Agriculture is described in Chapter XI of this volume, the investigations conducted by the Board of Grain Commissioners in Chapter XXI, the specialized work in scientific forest research in Chapter XII, scientific services concerned with Canada's mineral resources conducted by the Department of Energy, Mines and Resources in Chapters I and XIII, investigational work of the Department of Fisheries in Chapter XV, research of the Canadian Wildlife Service of the Department of Indian Affairs and Northern Development in Chapter I, medical and other research conducted by the Department of National Health and Welfare and other agencies in Chapter VI, and the work of the Defence Research Board in Chapter XXVI.

The Department of Indian Affairs and Northern Development operates a permanent scientific research laboratory north of the Arctic Circle. This laboratory, at Inuvik, N.W.T., has year-round facilities specially designed for Arctic research and serves as a base for extensive field studies in the Western Arctic. It accommodates a permanent staff of eight scientists from many disciplines and up to 16 visiting researchers. The operation of the laboratory is in charge of a manager working under the direction of the Northern Co-ordination and Research Centre of the Department.

### Subsection 2.—Provincial Organizations

Five of Canada's provincial governments (Nova Scotia, New Brunswick, Manitoba, Saskatchewan and Alberta) have established research councils or foundations and two others (Ontario and British Columbia) have assisted financially in the setting up of such



organizations. Quebec has also announced its intention of establishing a provincial research council and industrial research centre in the near future. Most provincial governments have university laboratories to consult, particularly about local industrial and agricultural problems, and many individual departments have facilities for research in their particular fields of endeavour or assist research through the provision of financial aid to students working in those and other scientific fields. Agriculture is particularly well covered because of its importance as an export industry but the provinces are also intensely interested in their other natural resources. Their efforts in the fields of agriculture, forestry, mining and fisheries are outlined in the Chapters dealing with those subjects (see Index).

**Nova Scotia Research Foundation.**—This body was created by the Government of Nova Scotia in 1946 to give its people scientific and technical assistance in finding new and better ways to utilize the resources of the forest, the sea, the farm, the mine and the process industries. To this end it seeks to correlate and further scientific work on local problems and available resources. Within three years a new \$1,250,000 laboratory building, to be financed by an Atlantic Development Board grant, will occupy a commanding 10-acre site in Dartmouth, N.S., and will house a staff of about 100, including 70 scientists and technicians. The Foundation assists universities, colleges, research groups, industries, provincial and federal departments and individuals by loans of equipment, grants, scholarships, laboratory and summer assistants, library, cartographic, photogrammetric and translation services, and technical information. It has supported or collaborated in work on breeding new varieties of plants and root nodule bacteria; on antibiotics, poultry, blueberry culture, coal-burning equipment, the constitution and gasification of coal, the non-destructive testing of mine equipment, the utilization of anhydrite, diatomite, fish waste, gypsum, seaweed, slag, slab wood and fertilizing materials. It has conducted geophysical, geological, air pollution and seaweed surveys as well as forest aphid, forest ecology and genetic studies and has assisted studies on the nutrient cycles of lakes, on X-ray crystallography, on pressures in underground strata and on crop damage by predators. Its Geophysical Division is equipped to undertake all types of magnetometric, gravimetric, resistivity, seismic and electromagnetic explorations, and so assess the possibilities of the existence of oil, gas, potash and other economic mineral deposits in Nova Scotia and in the surrounding sea. The Technical Services Division provides free technical information to industries in the province and offers them research and development services and facilities in the fields of physics, chemistry, engineering and operations research. The Operational Research Division applies operational research techniques to problems of distribution and the utilization of natural resources of the province. A *Research Foundation Bulletin* is issued from time to time to keep industry advised of Foundation activities and also of important discoveries in science and technology. The *Research Record* provides a descriptive account of past research projects.

**The New Brunswick Research and Productivity Council.**—The aims of this Council, established by an Act of Legislature in 1962, are *inter alia* to "promote, stimulate and expedite continuing improvements in productive efficiency and expansion in the various sectors of the New Brunswick economy". The Council receives an operating grant from the provincial government and support in specific areas from federal sources. It undertakes contract research on a repayment basis from industry. Its laboratories are at present 10,000 sq. feet on a seven-acre site in Fredericton, and plans are being drawn up to extend this to a total of 50,000 sq. feet with the support of a capital grant of \$1,250,000 from the Atlantic Development Board. Staff at the beginning of 1965 numbered 20 and is expected to increase to 35 by the beginning of 1966. The work of the Council is centred on providing industry with engineering, 'trouble-shooting' and technical information services, on training courses in management techniques and on applied research in the fields of mechanical and chemical engineering, food technology, microbiology and mineral technology. Policies are established by 13 Council members representative of provincial industry, labour, government and education with the help of specialist advisory committees.



The Executive Director has supervision over and direction of the work of the staff and has charge of all matters relating to the administration of the affairs of the Council. The Chairman of the Council reports annually to the Premier of the province.

**Manitoba Research Council.**—The Manitoba Research Council consists of seven members representing natural-resource-based industry, manufacturing, the University of Manitoba and labour. Its work is financed by provincial government appropriations, although fees and service charges may be levied for its services. The objectives of the Council are to promote or carry on, or cause to be promoted or carried on, research and scientific inquiries respecting agriculture, other natural resources, industry or other segments of the economy of the province and to help secure for Manitoba the benefits of research and scientific inquiries carried on elsewhere. The preponderance of small industrial establishments in Manitoba and their need for assistance in developing a more scientifically based production capability to improve their competitive position in domestic and world markets was the major technical reason for the establishment of the Council. At present it maintains an office and staff in the Provincial Government Administration Building (Norquay Building) in Winnipeg but plans for a major research and development park, under study for the past two years, have been announced. The central core of the park will include applied research laboratories operated by the Manitoba Research Council, complete with attached test bays and small industry product research modules; a series of pilot plant operations; allied industrial and resource research establishments; and common facilities such as a technical library, translation and reproduction facilities and computer services. The aim of this Research and Development Centre is to bridge the gap between pure research and industrial production and to give Manitoba a superior capacity in developing technology coupled with the economics of large-scale output.

**Saskatchewan Research Council.**—This Council was set up in 1947 under an Act of the Government of Saskatchewan. The Council carries out research in the physical sciences, both pure and applied, with the aim of improving the provincial economy. It is therefore particularly concerned with the commercial exploitation of provincial resources and the scientific aspects of business. At first the Council had no scientific personnel and laboratory facilities of its own. Its research program was carried on at the University of Saskatchewan and was promoted by means of grants to members of the staff and scholarships to graduate students. The 1947 Act was amended in 1954 to empower the Council to acquire property, employ staff and conduct its own financial affairs. Laboratory buildings were erected on the university campus in 1957 and were extended in 1963. In the present program of research the emphasis is on water and mineral resources, fields of agriculture not covered by other organizations, and technical assistance to industry. A large part of the program is carried out by the permanent staff, now numbering about 60, but some of the Council's research is still promoted by grants to university staff. The members of the controlling body, the Council proper, are appointed by the Lieutenant-Governor in Council and consist of representatives of the government, industry and the university.

**Research Council of Alberta.**—The Province of Alberta set up a scientific and industrial Research Council in co-operation with the University of Alberta in 1921, the promotion of mineral development within the province being the chief purpose leading to its establishment. The Council operates under an Act somewhat similar to that which set up the National Research Council and is principally financed by provincial government appropriations. The present program is directed to the application of basic and applied science toward the development of the natural resources of the province and toward the establishment of new industrial operations within the province. Investigations in the Council laboratories and pilot plant are organized into two branches—the Earth Sciences Branch which includes all work on groundwater geology, geological surveys and research, mineral beneficiation and soils, and the Fuels Branch which includes work on coal, petroleum, natural gas, chemical process and product development, and gasoline and oil testing.

There are, in addition, project groups dealing with industrial engineering services, highway research, a co-operative program on cloud physics with reference to the hail problem, and a number of special projects.

The operations of the organization are controlled by a Council of ten individuals representative of the government, the university and industry. The various research projects are reviewed by advisory committees composed of specialists in each field, drawn from industry, the university and the provincial government.

The main Council laboratories are located on the University of Alberta campus in Edmonton. A new pilot plant facility has recently been completed in the Clover Bar area east of the city.

**Ontario Research Foundation.\***—The Ontario Research Foundation, established in 1928, operates as an independent corporation, deriving its powers from a special Act of the Legislature and governed by a Board of Governors appointed by the Lieutenant-Governor in Council of Ontario. The organization was financed initially by an endowment fund composed of subscriptions from commercial and industrial corporations, and from private individuals, and a grant from the provincial government. However, most of its current income is derived from contract research undertaken for industry, although income is also obtained from the various government departments for research and other work undertaken on a contract basis. The Foundation is concerned primarily with the development of industry and the development of Ontario's natural resources through the application of scientific research. However, Foundation activities are not confined to the province; research contracts are routinely handled for any organization, without reference to location. Being primarily an industrial research institution, the Foundation's main areas of scientific endeavour are chemistry, physics, metallurgy, applied microbiology, textiles and engineering. A field engineering and technical information service is provided free to industry, sponsored by the Ontario Department of Economics and Development and by the National Research Council. In 1967 the Ontario Research Foundation relocated in Sheridan Park, Ont., where it is the nucleus organization of the Sheridan Park Research Community.

**British Columbia Research Council.\***—This Council is a non-profit, industrial research institute with offices and laboratories on the campus of the University of British Columbia. Its function is to enable even the smallest firms to improve their competitive position in Canadian and world markets by the use of the most up-to-date scientific knowledge. The Council provides a free technical information service in collaboration with the National Research Council, carries out contract research for clients on a confidential basis and initiates "in house" research programs designed to promote and utilize the resources of the province. The Council is active in the areas of applied biology, chemistry, engineering, physics, operations research, industrial market studies and economic feasibility studies.

### Subsection 3.—University Research

Research conducted in the universities falls into three broad categories: research projects carried out by faculty members in addition to their teaching duties; investigations by students, under the guidance of professors, to meet the requirements for advanced degrees; and larger projects or programs undertaken co-operatively on a faculty or inter-faculty basis in large laboratories or specialized institutes connected with the university.

**Faculty Resources.**—Research is generally considered to be an important part of the function of the university teacher and many of the 15,000 full-time staff members of Canadian universities can be assumed to be engaged in such activity. With most staff members, only the time that can be spared from teaching duties can be devoted to research during the teaching session but, for those not teaching summer classes, the summer months

\* See also p. 382.



offer an opportunity for relatively uninterrupted research activity. The projects undertaken are very diverse in character and defy brief classification here but information concerning them is available in the annual reports of the presidents of the individual universities. For the humanities only, a more convenient source of information about the scope and diversity of Canadian scholarship is the "Bibliography of Scholarly Publications" included in *The Humanities in Canada*, a report prepared by F. E. L. Priestley for the Humanities Research Council of Canada and published by the University of Toronto Press in 1964.

**Student Resources.**—Prior to World War II, higher education in Canada concentrated almost exclusively on the production of trained professionals to serve the community as doctors, lawyers, engineers, etc., and only three Canadian universities had established graduate schools. In 1964-65, however, 34 universities and colleges were offering work at the graduate level, 22 of them with doctorate programs. The writing of a research thesis is an important part of the requirements for the award of the higher degrees toward which the students enrolled in these schools work. Compilations of the numbers of such students by sex, course, university, degree sought and year of expected graduation may be found in the annual series *Statistical Summary of Students Registered in the Graduate Schools of Canadian Universities in Physical and Earth Sciences, in Architecture and Engineering, and in Life Sciences*, published by the National Research Council, and in *Graduate Students in the Humanities and Social Sciences Registered at Canadian Universities 1963-64*, published by the Association of Universities and Colleges of Canada.

In 1964-65, the total enrolment (full-time and part-time) in graduate schools of Canadian universities and colleges amounted to 13,797, of whom 2,320 were women. In the same year, 569 Ph.D.s and 4,095 Master degrees and *licences* were awarded.

**Financial Resources.**—Financial support for university research comes primarily from five sources: departments and agencies of the Federal Government, quite heavily committed to support research largely in the natural and life sciences; industry, which supports both basic and applied research; private foundations, which have for many years been generous supporters of research, sometimes in selected fields; provincial governments; and the United States Government. Among these, the Federal Government is the largest single contributor. In 1964-65, its share of the total provision of funds for university research amounted to about 57 p.c., provincial governments contributed about 15 p.c., 10 p.c. came from private foundations, a little over 5 p.c. from industry and the remainder from other sources.

Although federal funds are channelled through almost a score of different departments and agencies, by far the greatest part of the total is disbursed by four of them: the Defence Research Board, the Department of National Health and Welfare, the Medical Research Council and the National Research Council. Most of the assistance is in the form of direct grants in support of research projects undertaken by university staff members but a significant part of the total program is the assistance given to graduate students working for higher degrees. Funds are also made available to defray associated expenditures, such as those incurred in the publication of research journals and the holding of conferences.

The activities of the Defence Research Board in support of university research consist mainly in the provision of funds for projects in basic sciences that are relevant to the defence of the nation. Funds administered by the Department of National Health and Welfare and the Medical Research Council go chiefly to support research in the medical and para-medical sciences. The National Research Council confines its support to the physical and earth sciences, architecture and engineering, and the life sciences. The total amount of funds disbursed by these and the other Federal Government agencies in 1964-65 was over \$25,000,000, not including more than \$8,000,000 in scholarships and bursaries paid to students.



The major source of funds for the promotion of the arts, humanities and social sciences, including research in these fields, is the Canada Council (see p. 375). It is rather difficult to define and categorize the various aspects of the Council's support of university research. Broadly speaking, however, three main categories can be identified: assistance to individual postgraduate students and research fellows; grants-in-aid of particular research projects and assistance with ancillary research activities such as the compilation of indexes and bibliographies, purchases for libraries, publication costs and travel expenses. The total disbursed for the first two of these purposes in 1964-65 was some \$270,000, distributed about equally between each.\* As to the third, a significant portion of the \$300,000 spent on special projects and grants-in-aid, and on grants to organizations could be interpreted as assistance to university research in the humanities and social sciences.

In addition, some Federal Government agencies such as the Defence Research Board and the Departments of Manpower and Immigration, Labour, and Indian Affairs and Northern Development operate programs of university grants and contracts for research in economics, anthropology, sociology and related disciplines, but the total amount made available under these programs is not large.

#### Subsection 4.—Industrial Research

Industrial research in Canada is changing very rapidly. The emergence of the country as a highly industrialized society, its entrance into multitudinous fields of production, the rapid growth of many large nation-wide industries, the serving of a discriminating domestic market and the meeting of competition from abroad have had the effect of making Canadian manufacturing establishments research conscious and many of the larger ones now possess competent research organizations.

On Nov. 29, 1962, an amendment was passed by Parliament to the Income Tax Act, allowing corporate taxpayers, commencing in 1962, to deduct 150 p.c. of their increased expenditures on scientific research for industrial purposes when computing taxable income. This amendment is evidence of the Federal Government's desire to encourage industrial research.

**Industrial Research and Development Expenditures.**—The latest biennial DBS survey of expenditures on industrial research in Canada was conducted in 1964 and provided figures for the calendar year 1963 and estimates for the year 1964. These figures are summarized in the following tables; details are contained in DBS publication *Industrial Research and Development Expenditures in Canada, 1963* (Catalogue No. 13-524).

The type of industrial research and development covered by these surveys ranges from pure research designed to obtain new knowledge in the physical and life sciences to conceiving and developing new products and processes, or major changes in products and processes, and bringing them to the stage of production. Such activities as market research and process and quality control are excluded. Companies surveyed were asked to report the cost of research and development done within the company in Canada and payments for research done outside the company in Canada; estimates of payments for research and development conducted outside the company and outside of Canada were also requested.

Total figures show considerable fluctuation in expenditures on research and development over the years surveyed. However, this fluctuation has been caused largely by variations in Federal Government contracts to the aircraft sector of the transportation equipment industry. If all funds received from the Federal Government are removed from annual expenditures, a trend of continuous expansion is revealed. In 1963, 701 firms reported research expenditures; of these, 16 accounted for one half of all intramural research expenditures.

\* In the case of scholarships and fellowships, only those awards (about 75) made to students pursuing their studies at Canadian universities and colleges are included. Many of the close to 100 grants-in-aid of research were paid to defray expenses involved in travel and study abroad but, as the grantees were generally staff members of Canadian universities, these sums are included in the total.

**1.—Total Research and Development Expenditures, 1955-64**

Year	Expenditure on Research and Development in Canada		Expenditure on Research and Development Outside Canada	Total
	Done Within Reporting Company	Done Outside Reporting Company		
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1955.....	51.4	1.9	12.1	65.4
1957.....	124.5	4.2	19.8	148.5
1958 (estimate).....	132.5	1	27.0	159.5
1959.....	96.6	3.3	21.7	121.6
1960 (estimate).....	81.7	1	27.3	109.0
1961.....	114.0	4.3	31.2	147.1 <sup>2</sup>
1962 (estimate).....	124.5	1	35.4	159.9
1963.....	160.2	8.0	37.8	201.2 <sup>2</sup>
1964 (estimate).....	190.0	1	38.5	228.5

<sup>1</sup> Included with expenditures outside Canada.<sup>2</sup> Since extramural payments include a number of payments which become intramural expenditures for the recipient firms, the totals have been adjusted to exclude duplication.

Three industries—transportation equipment, electrical products, and chemicals and chemical products—have accounted for more than one half of all research and development performed in Canada every year since 1955. In 1961, for the first time, the research and development expenditures of the transportation equipment industry, which are used largely for aircraft development, did not exceed those of every other industry. In that year the electrical products industry, which includes electronic equipment, was the leading performer of industrial research and development. In 1963, the transportation equipment industry, with \$31,200,000 assigned to research and development expenditures, was still behind the electrical products industry; however, if payments made outside Canada are included, the transportation equipment industry was first (\$39,300,000) and the electrical products industry was second (\$34,500,000).

**2.—Research and Development Expenditures in Canada, by Major Industrial Group, 1961 and 1963**

Group	1961		1963	
	Amount	P.C. of Total	Amount	P.C. of Total
	\$		\$	
Transportation equipment.....	17,373,480	15.0	31,202,042	19.1
Electrical products.....	28,199,659	24.3	33,435,679	20.5
Chemicals and chemical products.....	20,292,535	17.5	25,021,027	15.3
Totals.....	65,865,674	56.8	89,658,748	54.9
Other industries.....	50,018,214	43.2	73,788,892	45.1
<b>Grand Totals.....</b>	<b>115,883,888</b>	<b>100.0</b>	<b>163,447,640</b>	<b>100.0</b>

Table 3 shows intramural research and development expenditures over the four years 1961-64. The transportation equipment industry is given separately because of substantial fluctuations in its expenditures. Most of the other industries have increased their research and development activities over the period; the chemical and electrical products industries reported the greatest absolute increases, together having accounted for over 45 p.c. of total intramural expenditures (excluding those of transportation equipment) since 1961.

### 3.—Intramural Research and Development Expenditures, by Industry, 1961-64

Industry	1961	1962 <sup>1</sup>	1963	1964 <sup>1</sup>
	\$	\$	\$	\$
Mining, quarrying and oil wells.....	4,820,816	5,305,551	6,560,188	6,640,782
Manufacturing—				
Foods and beverages.....	2,591,487	2,499,484	4,299,244	5,019,982
Rubber products.....	1,425,008	1,576,587	1,873,549	1,890,000
Textile products.....	1,487,152	1,562,364	1,875,104	1,984,415
Wood products.....	98,050	148,136	171,703	204,700
Furniture and fixtures.....	113,140	123,952	117,821	105,500
Paper products.....	6,545,370	7,201,684	9,099,560	10,228,722
Primary metal.....	7,053,761	8,217,319	10,434,484	11,111,600
Metal fabricating.....	2,361,759	3,093,503	4,160,003	3,004,136
Machinery.....	5,309,036	5,836,531	6,982,317	6,881,366
Electrical apparatus and supplies.....	28,179,519	28,435,263	33,288,516	37,241,774
Non-metallic mineral products.....	1,488,330	1,502,480	1,852,082	1,907,074
Products of petroleum and coal.....	5,529,202	6,450,932	7,583,466	8,875,000
Chemicals and chemical products.....	19,573,959	21,321,895	24,449,969	22,620,425
Other manufacturing (incl. tobacco and tobacco products, leather products, clothing and knitting mills, and miscellaneous).....	3,863,690	6,018,869	7,625,466	9,021,108
Transportation, storage, communication and other utilities.....	3,185,165	3,642,448	4,029,545	9,338,000 <sup>1</sup>
Other non-manufacturing (incl. construction industry, scientific and engineering services and trade associations).....	2,990,862	3,279,228	4,635,726	5,781,930
Totals (excl. transportation equipment)...	96,616,306	106,216,226	129,038,743	141,856,514
Transportation equipment.....	17,366,655	18,291,984	31,132,110	48,159,000
<b>Totals, All Industries.....</b>	<b>113,982,961</b>	<b>124,508,210</b>	<b>160,170,853</b>	<b>190,015,514</b>

<sup>1</sup> Estimates based on companies' intentions.

Among the product groups, the largest percentage of research and development expenditures was made in 1963 for the electrical products group, which accounted for 22.9 p.c. of the total compared with 18.9 p.c. in 1961. The chemicals group, including drugs and medicines, which accounted for 20.0 p.c. in 1961 and was in first place in that year, declined to 10.6 p.c. in 1963. The transportation equipment group as a whole received 18.8 p.c. of the total in 1963, of which aircraft and parts accounted for 16.7 p.c. as compared with 15.7 p.c. in 1961.

### 4.—Intramural Research and Development Expenditures, by Product Group, 1963

Product Group	Amount	P.C. of Total	Product Group	Amount	P.C. of Total
	\$			\$	
Aircraft and parts.....	26,729,646	16.7	Machinery (except electrical)...	8,271,375	5.2
Chemicals (except drugs and medicines).....	12,964,859	8.0	Motor vehicles and parts.....	2,941,619	1.8
Drugs and medicines.....	4,148,723	2.6	Petroleum and natural gas.....	6,480,500	4.1
Electrical equipment (except electronics).....	9,443,139	5.9	Primary metals.....	12,906,529	8.0
Electronics.....	27,232,687	17.0	Professional and scientific instruments.....	4,092,137	2.6
Fabricated metals.....	2,146,454	1.3	Other.....	33,834,288	21.3
Forest Products—					
Pulp and paper.....	7,509,970	4.6			
Other.....	1,468,927	0.9			
			<b>Totals.....</b>	<b>160,170,853</b>	<b>100.0</b>

The sources of research funds for intramural research and development in the different industries are shown in Table 5 for 1963. These figures are not comparable with those published for previous years.



**5.—Sources of Funds for Intramural Research and Development,  
by Industry, 1963**

Industry	Reporting Company	Parent, Affiliated or Sub- sidiary Companies	Govern- ment Funds	Contract Work for Other Companies	Other	Total
	\$	\$	\$	\$	\$	\$
Mining, quarrying and oil wells.....	6,011,055	27,582	124,900	218,422	178,229	6,560,188
Manufacturing—						
Foods and beverages.....	3,973,514	50,846	173,684	400	100,800	4,299,244
Rubber products.....	1,507,637	347,912	18,000	—	—	1,873,549
Textile products.....	1,858,104	—	17,000	—	—	1,875,104
Wood products.....	113,043	—	—	—	58,660	171,703
Furniture and fixtures.....	117,821	—	—	—	—	117,821
Paper and allied industries.....	7,142,082	134,841	70,237	174,200	1,578,200	9,099,560
Primary metal.....	10,336,987	32,183	1,438	31,214	32,662	10,434,484
Metal fabricating.....	3,213,447	3,500	929,056	—	14,000	4,160,003
Machinery.....	6,043,553	678,731	260,033	—	—	6,982,317
Transportation equipment.....	15,826,953	203,032	13,761,691	7,434	1,333,000	31,132,110
Electrical products.....	23,057,649	378,336	9,358,034	220,497	274,000	33,288,516
Non-metallic mineral products....	799,450	954,469	98,163	—	—	1,852,082
Petroleum and coal products.....	7,407,713	—	42,121	133,632	—	7,583,466
Chemicals and chemical products.	21,931,396	1,779,624	738,949	—	—	24,449,969
Other manufacturing (incl. tobacco and tobacco products, leather products, clothing and knitting mills, and miscellaneous).....	4,634,575	42,000	2,315,200	633,691	—	7,625,466
Transportation, storage, commun- ication and other utilities.....	4,004,545	—	25,000	—	—	4,029,545
Other non-manufacturing (incl. the construction industry, scientific and engineering services and trade associations).....	360,482	2,463,924	265,930	1,361,398	183,992	4,635,726
<b>Totals.....</b>	<b>118,340,006</b>	<b>7,096,980</b>	<b>28,199,436</b>	<b>2,780,888</b>	<b>3,753,543</b>	<b>160,170,853</b>
Percentage of Total Funds.....	73.9	4.4	17.6	1.7	2.3	100.0

**Section 6.—Federal Government Expenditures on Scientific  
Activities**

Information on Federal Government expenditures on scientific activities is provided by biennial surveys carried out by the DBS since 1959. Each survey covers the actual costs of the preceding fiscal year and the estimated expenditures of the current year on the scientific programs of the reporting departments and agencies. At present, only activities in the physical and life sciences are included, although eventually the surveys will be expanded to include the social sciences and humanities. For survey purposes, "scientific activities" consist of research and development, scientific data collection, scientific information and scientific scholarships. Data are also collected on capital expenditures on plant for scientific activities and on personnel employed in research and development.

As shown in Table 6, total costs of scientific activities have risen every year since 1962-63. The annual increases were 16 p.c., 11 p.c. and 19 p.c. The National Research Council and the Department of National Defence together accounted for nearly 42 p.c. of the total expenditures, National Defence being the largest individual spender. More detail on the expenditures of the individual departments and agencies is shown for 1964-65 and 1965-66 in Table 7.

### 6.—Summary Statistics of Federal Government Expenditures on Scientific Activities, Years Ended Mar. 31, 1963-66

Activity and Department or Agency	1962-63 <sup>r</sup>	1963-64 <sup>r</sup>	1964-65 <sup>r</sup>	1965-66 <sup>1</sup>
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
<b>Scientific Activity—</b>				
Conduct of research and development.....	170.8	195.4	204.6	244.5
Grants-in-aid of research.....	20.9	26.8	36.1	49.5
Capital expenditures on plant for scientific activities.....	28.9	37.2	50.2	56.8
Scientific data collection.....	24.1	25.6	24.4	25.3
Scientific information.....	9.7	10.1	12.8	14.5
Scholarship and fellowship programs.....	2.6	2.8	3.8	5.5
<b>Totals, Scientific Activities.....</b>	<b>257.0</b>	<b>297.9</b>	<b>331.8</b>	<b>396.2</b>
<b>Department or Agency—</b>				
Agriculture.....	29.6	30.6	33.4	39.4
Atomic Energy (incl. Atomic Energy Control Board and Atomic Energy of Canada Ltd.).....	39.4	46.5	54.3	57.0
Energy, Mines and Resources.....	42.4 <sup>2</sup>	42.3 <sup>2</sup>	43.6 <sup>2</sup>	51.2 <sup>2</sup>
National Research Council (incl. Medical Research Council)	44.7	52.5	60.8	79.0
National Defence—				
Armed Forces.....	27.6	31.7	30.7	43.3
Defence Research Board.....	31.8	38.5	39.2	42.6
Others.....	41.5	55.8	69.8	83.7
<b>Totals, Departments and Agencies.....</b>	<b>257.0</b>	<b>297.9</b>	<b>331.8</b>	<b>396.2</b>

<sup>1</sup> Estimated.<sup>2</sup> Revised to include the Water Resources Branch, which, until 1966, was part of the former Department of Northern Affairs and National Resources.

### 7.—Federal Government Expenditures on Scientific Activities, by Department or Agency, Years Ended Mar. 31, 1965 and 1966

Department or Agency	1964-65 <sup>r</sup>				1965-66 <sup>1</sup>			
	Current Expenditures on Research and Development	Current Expenditures on Other Scientific Activities	Capital Expenditures	Total Funds Applied	Current Expenditures on Research and Development	Current Expenditures on Other Scientific Activities	Capital Expenditures	Total Funds Applied
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Department of Agriculture.....	26,738	668	6,003	33,409	28,852	726	9,812	39,390
Atomic Energy (incl. Atomic Energy Control Board and Atomic Energy of Canada Ltd.).....	36,946	47	17,327	54,320	42,694	55	14,227	56,976
Department of Fisheries.....	9,277	25	1,647	10,949	11,597	23	3,416	15,036
Department of Forestry and Rural Development.....	7,651	3,602	2,441	13,694	9,473	3,999	1,732	15,204
Department of Industry.....	20,527	—	—	20,527	26,742	—	—	26,742
Medical Research Council.....	5,954	1,086	—	7,040	10,897	1,461	—	12,358
Department of Energy, Mines and Resources.....	15,556	23,885	4,170	43,611	17,576 <sup>2</sup>	24,720 <sup>2</sup>	8,877 <sup>2</sup>	51,173 <sup>2</sup>
Department of National Health and Welfare.....	6,527	925	2,622	10,074	6,741	1,251	1,101	9,093
National Research Council.....	44,435	4,489	4,830	53,754	54,368	6,084	6,200	66,652
Department of Indian Affairs and Northern Development.....	868	552	144	1,564	1,154	855	323	2,332
Department of the Secretary of State.....	235	3,189	5	3,429	254	3,637	5	3,896
Department of Transport.....	2,196	16	6,539	8,751	2,655	20	7,970	10,645
Department of Veterans Affairs.....	429	—	—	429	438	—	—	438
Other civilian departments or agencies.....	372	4	21	397	406	4	4	414
<b>Totals, excluding National Defence.....</b>	<b>177,711</b>	<b>38,488</b>	<b>45,749</b>	<b>261,948</b>	<b>213,847</b>	<b>42,835</b>	<b>53,667</b>	<b>310,349</b>
Department of National Defence..	62,968	2,476	4,449	69,893	80,202	2,492	3,166	85,860
Armed Forces.....	25,678	2,289	2,698 <sup>3</sup>	30,665	39,997	2,132	1,157 <sup>3</sup>	43,286
Defence Research Board.....	37,290	187	1,751	39,228	40,205	360	2,009	42,574
<b>Totals, All Departments and Agencies.....</b>	<b>240,679</b>	<b>40,964</b>	<b>50,198</b>	<b>331,841</b>	<b>294,049</b>	<b>45,327</b>	<b>56,833</b>	<b>396,209</b>

<sup>1</sup> Estimated.<sup>2</sup> Revised to include the Water Resources Branch, which, until 1966, was part of the former Department of Northern Affairs and National Resources.<sup>3</sup> Many of the capital expenditures of the Armed Forces are unavailable.

About three quarters of the Federal Government's payments for scientific activities are for the operating costs of research and development. Table 8 reveals an interesting change in the relative importance of the performing organizations. Although the Government continues to perform most of this research and development within its own establishments, its support of outside research is increasing; in 1962-63 intramural expenditures were almost 80 p.c. of the total but in 1965-66 they accounted for only about 62 p.c. Financial support of industrial research and development has more than tripled during the past four years and now represents over one fifth of the Federal Government's current expenditures on research and development compared with about one tenth in 1962-63.

**8.—Federal Government Current Expenditures on Research and Development,  
Years Ended Mar. 31, 1963-66**  
(Millions of dollars)

Performing Organization	1962-63 <sup>1</sup>	1963-64 <sup>1</sup>	1964-65 <sup>1</sup>	1965-66 <sup>1</sup>
Reporting unit.....	151.2	162.3	165.3	181.9
Canadian industry.....	20.2	35.9	45.0	69.7
Educational institutions and individuals at such institutions....	17.4	20.0	26.8	37.9
Others (incl. non-profit organizations, other governments and foreign recipients).....	3.0	4.0	3.6	4.4
<b>Totals, Expenditures.....</b>	<b>191.7</b>	<b>222.2</b>	<b>240.7</b>	<b>294.0</b>

<sup>1</sup> Estimated.

As shown in Table 9, most of the federally financed research and development projects are in the physical sciences (over 70 p.c.). Engineering alone receives over 40 p.c. of the total funds available. Within the life sciences, almost half of the Federal Government's expenditures are for projects in support of agriculture.

The three most important areas of investigation are military science, which absorbs about one third of the funds spent on research and development, nuclear science and agriculture, fishing and forestry.

**9.—Federal Government Current Expenditures on Research and Development, by  
Scientific Field and Area of Investigation, Years Ended Mar. 31, 1965 and 1966**  
(Millions of dollars)

Scientific Field	1964-65 <sup>1</sup>	1965-66 <sup>1</sup>	Scientific Field and Area of Investigation	1964-65 <sup>1</sup>	1965-66 <sup>1</sup>
<b>Scientific Field</b>			<b>Scientific Field—concl.</b>		
<b>Physical Sciences.....</b>	<b>173.8</b>	<b>215.1</b>	<b>Life Sciences.....</b>	<b>66.9</b>	<b>79.0</b>
Engineering.....	101.6	129.6	Agricultural sciences.....	32.3	35.4
Aeronautical.....	23.1	23.5	Biological sciences.....	18.7	22.1
Chemical.....	3.0	3.0	Medical sciences.....	15.9	21.5
Civil.....	2.0	2.4	<b>Totals, All Scientific Fields.....</b>	<b>240.7</b>	<b>294.0</b>
Electrical and electronic.....	21.9	30.5			
Mechanical.....	15.5	30.2	<b>Area of Investigation</b>		
Other.....	36.1	40.0	Nuclear science.....	39.3	44.9
Chemistry.....	15.6	18.2	Space travel and communications.....	4.7	9.4
Earth sciences.....	8.9	10.3	Military science.....	81.0	100.3
Metallurgy.....	3.8	4.2	Agriculture, fishing and forestry.....	50.2	57.9
Meteorology.....	2.1	2.5	Construction and building.....	2.9	3.1
Oceanography.....	4.4	4.7	Transportation.....	2.4	2.9
Physics, nuclear.....	11.9	14.5	Telecommunications.....	0.3	0.3
Physics, non-nuclear.....	20.9	22.6	Health and hygiene.....	15.3	21.0
Other.....	4.6	8.5	Industry, including mining.....	14.5	18.8
			Other.....	30.1	35.4

<sup>1</sup> Estimated.



# CHAPTER IX.—CRIME AND DELINQUENCY\*

## CONSPECTUS

	PAGE		PAGE
SECTION 1. CANADIAN CRIMINAL LAW AND PROCEDURE.....	412	SECTION 3. JUVENILE DELINQUENTS.....	425
SECTION 2. ADULT OFFENDERS AND CONVICTIONS.....	414	SECTION 4. CORRECTIONAL INSTITUTIONS AND TRAINING SCHOOLS.....	428
Subsection 1. Adults Convicted of Indictable Offences.....	414	Subsection 1. Statistics of Correctional Institutions and Training Schools.....	428
Subsection 2. Young Adult Offenders (16-24 Years) Convicted of Indictable Offences.....	421	Subsection 2. The Canadian Penitentiary Service.....	429
Subsection 3. Convictions for Summary Conviction Offences.....	423	Subsection 3. The National Parole System.....	431
Subsection 4. Appeals.....	424	SECTION 5. POLICE FORCES AND CRIME STATISTICS.....	432

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

## Section 1.—Canadian Criminal Law and Procedure†

The system under which justice is administered in a State is never rigid. To have it so would be neither expedient nor indeed possible. A judicial system must grow and adapt itself to the requirements of the people, and the exact limits of the powers of different legislative bodies require continued definition.

The criminal law of Canada has as its foundation the criminal common law of England built up through the ages and consisting first of customs and usages and later expanded by principles enunciated by generations of judges. There is no statutory declaration of the introduction of English criminal law into those parts of Canada that are now the Provinces of New Brunswick, Nova Scotia and Prince Edward Island. Its introduction there depends upon a principle of the common law itself by which English law was declared to be in force in uninhabited territory discovered and planted by British subjects, except in so far as local conditions made it inapplicable. The same may be said of Newfoundland although the colony dealt with the subject in a statute of 1837. In Quebec its reception depends upon a Royal Proclamation of 1763 and the Quebec Act of 1774. In each of the other provinces and in the Yukon and Northwest Territories the matter has been dealt with by statute.

The judicial systems of the provinces as they exist today are based upon the British North America Act of 1867. Sect. 91 of the Act provides that "The exclusive legislative authority of the Parliament of Canada extends to . . . the criminal law, except the constitution of courts of criminal jurisdiction but including the procedure in criminal matters". By Sect. 92 (14), the legislature of the province exclusively may make laws in relation to "the administration of justice in the province, including the constitution, maintenance and organization of provincial courts, both of civil and criminal jurisdiction and including procedure in civil matters in its courts". The Parliament of Canada may, however (Sect.

\* Except as otherwise credited, this Chapter has been revised in the Judicial Section, Health and Welfare Division, Dominion Bureau of Statistics.

† Prepared by the Criminal Law Section, Department of Justice, Ottawa.

101), establish any additional courts for the better administration of the laws of Canada. It should be noted that the Statute of Westminster, 1931 effected important changes, particularly by abrogating the Colonial Laws Validity Act, 1865 (Br.) and confirming the right of a dominion to make laws having extraterritorial operation. Particulars of the federal judiciary are given in Chapter II, pp. 103-104, and provincial judiciaries are dealt with briefly at p. 105.

At the time of Confederation each of the colonies affected had its own body of statutes relating to the criminal law. In 1869, in an endeavour to assimilate them into a uniform system applicable throughout Canada, Parliament passed a series of Acts, some of which dealt with offences of special kinds and others with procedure. Most notable of the latter was the Criminal Procedure Act, but other Acts provided for the speedy trial or summary trial of indictable offences, the powers and jurisdiction of justices of the peace in summary conviction matters and otherwise, and the procedure in respect of juvenile offenders.

Codification of the criminal law through a Criminal Code Bill founded on the English draft code of 1878, Stephen's *Digest of Criminal Law*, Burbridge's *Digest of the Canadian Criminal Law*, and the relevant Canadian statutes was brought about by the Minister of Justice, Sir John Thompson, in 1892. This Bill became the Criminal Code of Canada and came into force on July 1, 1893. It must be remembered, however, that the Criminal Code was not exhaustive of the criminal law. It was still necessary to refer to English law in certain matters of procedure and it was still possible to prosecute for offences at common law. Moreover, Parliament has declared offences against certain other Acts, e.g., the Narcotic Control Act, to be criminal offences and the same was done in the Defence of Canada Regulations and the Wartime Prices and Trade Board Regulations (neither now in force) promulgated under the authority of the War Measures Act.

It is often difficult to distinguish between 'law' and 'procedure'. Procedure may be interpreted to relate simply to the organic working of the courts but, in a wider sense, it may also affect the rights or alter the legal relations arising out of any given state of facts. For present purposes it will be useful to note that writers on jurisprudence describe law as being substantive or adjective. "Substantive law is concerned with the ends which the administration of justice seeks; procedural (adjective) law deals with the means and instruments by which these ends are to be obtained."\* With reference to the criminal law, the former may be taken to include the provisions concerning criminal responsibility, the definition of 'offences' and the punishment for those offences, and the latter to include provisions for enforcement, e.g., powers to search and to arrest, for the modes of trial and for the proof of facts. Broadly speaking, the Criminal Code observes the distinction although it might appear that the provisions for preventive detention of habitual criminals and dangerous sexual offenders partake of the nature of both classes.

An examination and study of the Criminal Code was authorized by Order in Council dated Feb. 3, 1949, and the Commission assigned the task of revising the Code presented its report with a draft Bill in February 1952. After coming before successive sessions of Parliament it was finally enacted on June 15, 1954 and the new Criminal Code (SC 1953-54, c. 51) came into effect on Apr. 1, 1955. Since the new Code came into force several amendments have been made, for the most part in relation to procedure. Among the most notable of these, as well in point of procedure as of substance, are: an amendment in 1956 providing that motions for leave to appeal to the Supreme Court of Canada in criminal cases should be heard by a quorum (at least five) of judges of that Court instead of a single judge; amendments effected by SC 1959, c. 41, providing a statutory extension of the definition of "obscenity" and making provision for seizure and condemnation of offending material without a charge necessarily being laid against any person; extensive amendments relating to the allowing of time for payment of fines; amendments dealing with offences committed in aircraft in flight over the high seas; an amendment forbidding the publication in a news-

\* Salmond on *Jurisprudence*, 7th Edition, p. 496.

paper or broadcast of a report that any admission or confession was tendered in evidence at a preliminary inquiry or a report of the nature of such admission or confession unless the accused has been discharged or, if the accused has been committed for trial, the trial has ended.

The Parole Act (SC 1958, c. 38), brought into force on Feb. 15, 1959, revises the parole system and provides for the establishment of a National Parole Board (see pp. 431-432).

It is most important to note that in 1960 (SC 1960, c. 44) Parliament enacted what is known as the Canadian Bill of Rights. Although the Act sets out further details, its general scope appears in Sect. 1, which reads as follows:—

"1. It is hereby recognized and declared that in Canada there have existed and shall continue to exist without discrimination by reason of race, national origin, colour, religion or sex, the following human rights and fundamental freedoms, namely,

- (a) the right of the individual to life, liberty, security of the person and enjoyment of property, and the right not to be deprived thereof except by due process of law;
- (b) the right of the individual to equality before the law and the protection of the law;
- (c) freedom of religion;
- (d) freedom of speech;
- (e) freedom of assembly and association; and
- (f) freedom of the press."

Although the Bill of Rights has been invoked on various occasions, the courts have not held it to affect the operation of the Criminal Code.

In 1961 (SC 1960-61, cc. 43-44), the offence of murder was divided into capital and non-capital, the death penalty was abolished in relation to the offence of non-capital murder, and the term *criminal sexual psychopath* was dropped and the term *dangerous sexual offender* substituted; in 1965 (SC 1964-65, c. 53) provision was made for the right to appeal in *habeas corpus* proceedings.

## Section 2.—Adult Offenders and Convictions

Offences may be classified under two headings, "indictable offences" and "offences punishable on summary conviction". Indictable offences are grouped in two main categories: (1) offences that violate the Criminal Code and (2) offences against federal statutes. These include the graver crimes. Offences punishable on summary conviction—those not expressly made indictable—include offences against the Criminal Code, provincial statutes and municipal by-laws. It is debatable how far some summary conviction offences are of a criminal nature and whether their increase indicates an increase in crime. Many are breaches of municipal by-laws and contrary to public safety, health and comfort, as, for example, parking violations or practising trades without licence but, on the other hand, summary conviction offences may include such serious charges as assault and contributing to juvenile delinquency.

The following Subsection 1 deals with adults convicted of indictable offences, Subsection 2 with young adult offenders convicted of indictable offences, Subsection 3 with convictions for summary conviction offences and Subsection 4 with appeals.

### Subsection 1.—Adults Convicted of Indictable Offences

Statistics of indictable crimes are based on persons, so that it may be possible to evaluate the population engaged in prohibited activities and to help in the treatment of anti-social behaviour in terms of subject-centred action. In the present counting system, although individuals may be charged with more than one offence, only one offence is tabulated for each person. This offence is selected according to the following criteria



(1) if the person were tried on several charges, the offence selected is that for which proceedings were carried to the farthest stage—conviction and sentence; (2) if there were several convictions, the offence selected is that for which the heaviest punishment was awarded; (3) if the final result of proceedings on two or more charges were the same, the offence selected is the more serious one, as measured by the maximum penalty allowed by the law; (4) if a person were prosecuted for one offence and convicted of another—for example, charged with murder and convicted of manslaughter—the offence selected is the one for which the person was convicted.

In 1964 there were 46,551 adults charged with 84,546 indictable offences, of whom 42,097 were found guilty of 76,310 offences. In the previous year there were 47,616 adults charged with 86,674 indictable offences, of whom 42,914 were found guilty of 78,518 offences.

**1.—Persons Charged and Persons Convicted of Indictable Offences, with Ratio per 100,000 Population 16 Years of Age or Over, by Province, 1963 and 1964**

Province or Territory	Persons Charged		Persons Convicted				Persons Convicted per 100,000 Population 16 Years of Age or Over	
	1963	1964	1963		1964		1963	1964
	No.	No.	No.	p.c.	No.	p.c.	No.	No.
Newfoundland.....	902	859	872	96.7	825	96.0	322	296
Prince Edward Island.....	67	51	64	95.5	48	94.1	96	72
Nova Scotia.....	1,684	1,656	1,516	90.0	1,470	88.8	316	304
New Brunswick.....	1,315	1,246	1,283	97.6	1,199	96.2	339	320
Quebec.....	10,667	9,559	9,690	90.8	8,670	90.7	281	246
Ontario.....	17,079	16,122	14,785	86.6	14,063	87.2	348	324
Manitoba.....	2,344	2,903	2,231	95.2	2,757	95.0	358	438
Saskatchewan.....	1,986	2,210	1,869	94.1	2,099	95.0	314	349
Alberta.....	4,664	4,860	4,383	94.0	4,608	94.8	498	514
British Columbia.....	6,645	6,903	5,965	89.8	6,188	89.6	526	530
Yukon and Northwest Territories.....	263	182	256	97.3	170	93.4	1,138	726
<b>Canada.....</b>	<b>47,616</b>	<b>46,551</b>	<b>42,914</b>	<b>90.1</b>	<b>42,097</b>	<b>90.4</b>	<b>354</b>	<b>340</b>

Table 2 classifies indictable offences by type of offence for 1963 and 1964. Class I covers offences against the person and in 1964 there were 6,009 males and 281 females convicted in this category, mostly for assaults of various kinds. Classes II to IV deal with offences against property. Thefts predominate among the offences in these classes, and breaking and entering and robbery, serious crimes which involve acts of violence, are the next most numerous. Class V deals with offences relating to currency and Class VI with miscellaneous offences; among the latter, the most numerous convictions are for offences connected with gaming, betting and lotteries. In 1964 there were 241 men and 115 women convicted under federal statutes of whom 194 men and 106 women were offenders under the Narcotic Control Act.

**2.—Persons Charged and Convicted of Indictable Offences, by Class of Offence,  
1963 and 1964**

Class of Offence	1963			1964			Increase or Decrease in Persons Convicted
	Persons Charged	Persons Convicted		Persons Charged	Persons Convicted		
		M.	F.		M.	F.	
Criminal Code	No.	No.	No.	No.	No.	No.	p.c.
<b>Class I.—Offences against the Person</b>	<b>7,245</b>	<b>5,786</b>	<b>240</b>	<b>7,533</b>	<b>6,009</b>	<b>281</b>	<b>+4.4</b>
Abduction and kidnapping	50	31	—	67	52	1	+71.0
Assault, causing bodily harm, common, on police and obstruction	4,854	3,918	169	5,178	4,201	193	+7.5
Offences against females <sup>1</sup>	1,069	825	27	1,000	748	19	-10.0
Causing death by criminal negligence, <sup>2</sup> manslaughter and murder	244	142	9	206	131	6	-9.3
Attempted murder, causing bodily harm and danger	204	144	13	208	131	26	—
Duties tending to preservation of life	24	21	—	20	12	—	-42.9
Other offences against the person	800	705	22	854	734	36	+5.9
<b>Class II.—Offences against Property with Violence</b>	<b>9,265</b>	<b>8,561</b>	<b>140</b>	<b>8,978</b>	<b>8,236</b>	<b>163</b>	<b>-3.5</b>
Breaking and entering a place, extortion and robbery	9,265	8,561	140	8,978	8,236	163	-3.5
<b>Class III.—Offences against Property without Violence</b>	<b>23,564</b>	<b>18,985</b>	<b>2,701</b>	<b>23,334</b>	<b>18,377</b>	<b>3,066</b>	<b>-1.1</b>
Fraud and false pretences	2,943	2,340	287	2,849	2,241	274	-4.3
Having in possession	2,674	2,182	112	2,625	2,165	114	-0.7
Theft	17,947	14,463	2,302	17,860	13,971	2,678	-0.7
<b>Class IV.—Malicious Offences against Property</b>	<b>1,119</b>	<b>944</b>	<b>43</b>	<b>1,104</b>	<b>925</b>	<b>44</b>	<b>-1.8</b>
Arson and other fires	157	118	16	131	92	12	-22.4
Other interference with property	962	826	27	973	833	32	+1.4
<b>Class V.—Forgery and Other Offences Relating to Currency</b>	<b>1,304</b>	<b>1,111</b>	<b>131</b>	<b>1,315</b>	<b>1,087</b>	<b>151</b>	<b>-0.3</b>
Forgery and uttering forged documents	1,220	1,045	131	1,269	1,049	151	+2.0
Offences relating to currency	84	66	—	46	38	—	-42.4
<b>Class VI.—Other Offences</b>	<b>4,623</b>	<b>3,503</b>	<b>359</b>	<b>3,841</b>	<b>3,052</b>	<b>350</b>	<b>-11.9</b>
Criminal negligence in operation of motor vehicles	51	43	—	29	27	—	-37.2
Driving while ability to drive is impaired	686	616	12	422	347	6	-43.8
Driving while intoxicated	27	26	—	26	21	1	-15.4
Gaming, betting and lotteries	774	617	64	690	550	50	-11.9
Keeping bawdy houses	238	35	174	246	37	183	+5.3
Various other offences	2,847	2,166	109	2,428	2,070	110	-4.2
<b>Totals, Criminal Code</b>	<b>47,120</b>	<b>38,890</b>	<b>3,614</b>	<b>46,105</b>	<b>37,686</b>	<b>4,055</b>	<b>-1.8</b>
<b>Federal Statutes</b>							
Narcotic Control Act	376	191	105	376	194	106	+1.4
Other statutes	120	97	17	70	47	9	-50.9
<b>Totals, Federal Statutes</b>	<b>496</b>	<b>288</b>	<b>122</b>	<b>446</b>	<b>241</b>	<b>115</b>	<b>-13.2</b>
<b>Grand Totals</b>	<b>47,616</b>	<b>39,178</b>	<b>3,736</b>	<b>46,551</b>	<b>37,927</b>	<b>4,170</b>	<b>-1.9</b>

<sup>1</sup> Includes abortion, indecent assault on female, sexual intercourse and attempt, incest, procuring, rape, attempted rape and seduction.      <sup>2</sup> Includes causing death in the operation of a motor vehicle or otherwise.

Table 3 shows that 43.3 p.c. of the persons convicted of indictable offences in 1964 had not gone beyond elementary school grades in education, 54.0 p.c. were 24 years of age or younger, 32.0 p.c. were between the ages of 25 and 44, and 77.7 p.c. lived in urban centres. Of these offenders, 90.1 p.c. were males, 86.0 p.c. were born in Canada, 62.7 p.c. were single, 20.1 p.c. were recorded as labourers and 12.1 p.c. had no remunerative employment.

### 3.—Persons Convicted of Indictable Offences classified by Occupation, Marital Status, Sex, Birthplace, etc., 1963 and 1964

Item	1963	1964	Item	1963	1964
	No.	No.		No.	No.
<b>Total Persons Convicted.....</b>	<b>42,914</b>	<b>42,097</b>	<b>SEX</b>		
<b>TYPE OF OCCUPATION</b>			Male.....	39,178	37,927
Agriculture.....	1,637	1,518	Female.....	3,736	4,170
Armed Services.....	315	300	<b>EDUCATIONAL STATUS</b>		
Clerical.....	1,195	1,228	Unable to read or write.....	402	334
Commercial and managerial.....	2,591	2,247	Elementary.....	19,769	17,894
Construction.....	4,552	4,334	High school.....	16,637	16,965
Finance.....	108	53	Superior.....	501	615
Fishing, trapping and logging.....	1,537	1,588	Grade not stated.....	747	935
Labourer.....	9,080	8,447	Not given.....	4,858	5,354
Manufacturing and mechanical.....	4,097	3,873	<b>AGE</b>		
Mining.....	498	592	16 to 19 years.....	13,456	13,657
Service—			20 to 24 years.....	9,297	9,087
Domestic.....	1,075	1,069	25 to 44 years.....	14,391	13,473
Personal.....	1,363	1,349	45 years or over.....	3,878	3,601
Professional.....	399	399	Not given.....	1,892	2,279
Public and protective.....	71	84	<b>BIRTHPLACE</b>		
Other.....	135	129	Canada.....	37,485	36,207
Student.....	3,375	3,895	British Isles and other Common-		
Transportation and communica-			wealth.....	886	797
tions.....	2,838	2,740	United States.....	316	325
Unemployed and retired (incl.			Europe.....	1,929	1,840
housewives).....	4,902	5,075	Asia.....	91	72
Not given.....	3,146	3,177	Other foreign countries.....	17	23
			Not given.....	2,190	2,833
<b>MARITAL STATUS</b>			<b>RESIDENCE</b>		
Single.....	26,715	26,395	Urban centres.....	33,815	32,704
Married.....	11,555	10,769	Rural districts.....	7,299	7,311
Widowed.....	442	443	Indeterminate.....	718	841
Divorced.....	386	426	Not given.....	1,082	1,241
Separated.....	1,787	1,722			
Not given.....	2,029	2,342			

**Female Offenders.**—There were 4,170 female offenders convicted of indictable offences in 1964 compared with 3,736 in 1963. Of these offenders, Ontario accounted for 1,667, Quebec for 784 and British Columbia for 647. The ratio of female offenders convicted to total convictions moved upward from 8.7 p.c. in 1963 to 9.9 p.c. in 1964, ranging from 5.3 p.c. in the Yukon and Northwest Territories to 11.9 p.c. in Ontario.

### 4.—Females Convicted of Indictable Offences, by Province, 1963 and 1964

Province or Territory	Females Convicted		Females Convicted to Total Convictions	
	1963	1964	1963	1964
	No.	No.	p.c.	p.c.
Newfoundland.....	65	81	7.5	9.8
Prince Edward Island.....	1	4	1.6	8.3
Nova Scotia.....	81	83	5.3	5.6
New Brunswick.....	70	76	5.5	6.3
Quebec.....	717	784	7.4	9.0
Ontario.....	1,470	1,667	9.9	11.9
Manitoba.....	238	269	10.7	9.8
Saskatchewan.....	130	172	7.0	8.2
Alberta.....	387	378	8.8	8.2
British Columbia.....	560	647	9.4	10.5
Yukon and Northwest Territories.....	17	9	6.6	5.3
<b>Canada.....</b>	<b>3,736</b>	<b>4,170</b>	<b>8.7</b>	<b>9.9</b>



**Multiple Convictions.**—Table 5 shows the number of persons having more than one conviction at a court appearance for the years 1960 to 1964. Multiple convictions occur most often in cases of forgery and uttering, false pretences, theft, having in possession, and breaking and entering.

**5.—Persons Convicted of More than One Offence at the Time of Trial compared with Persons Convicted of One Offence, 1960-64**

Item	1960	1961	1962	1963	1964
	No.	No.	No.	No.	No.
Persons Convicted of—					
2 offences.....	4,940	5,463	5,669	6,244	6,085
3 offences.....	1,904	2,040	2,046	2,155	2,094
4 offences.....	933	1,080	1,023	1,164	1,052
5 offences.....	569	593	594	615	587
6 offences.....	365	357	389	407	412
7 offences.....	256	279	262	276	258
8 offences.....	196	207	194	217	209
9 offences.....	155	146	140	170	151
10 offences.....	109	125	118	123	121
11 to 20 offences.....	392	423	416	491	476
21 offences or over.....	119	144	151	169	151
Totals, Convicted of More than One Offence.....	9,938	10,857	11,002	12,031	11,596
Totals, Convicted of One Offence.....	25,505	27,822	27,661	30,883	30,501
<b>Grand Totals.....</b>	<b>35,443</b>	<b>38,679</b>	<b>38,663</b>	<b>42,914</b>	<b>42,097</b>

**Disposition of Cases and Previous Convictions.**—As shown in Table 1, p. 415, of all suspects before the courts for indictable offences in 1964, 90.4 p.c. were adjudged guilty. There was, however, considerable variation among the provinces in this respect, the proportion ranging from 87.2 p.c. in Ontario to 96.2 p.c. in New Brunswick.

Table 6 shows that of the 42,097 persons convicted in 1964, 26.2 p.c. had no previous conviction, 14.5 p.c. had previously been found guilty of one offence and 33.4 p.c. had two or more earlier convictions; court records for the other 25.9 p.c. were not obtained. There is little change in these percentages from year to year.

**6.—Persons Charged with Indictable Offences, Disposition of Cases and Previous Convictions, 1963 and 1964**

Item	1963	1964	Item	1963	1964
	No.	No.		No.	No.
Charged.....	47,616	46,551	Males convicted.....	39,178	37,927
Acquitted.....	4,397	4,090	Females convicted.....	3,736	4,170
Disagreement of jury.....	7	9	First conviction.....	11,222	11,047
Stay of proceedings.....	195	255	Second conviction.....	6,213	6,087
No Bill.....	47	34	Reiterated convictions.....	14,691	14,041
Detained because of insanity.....	56	66	Not given.....	10,788	10,922

**Sentences, Method of Trial and Court Proceedings.**—Table 7 summarizes the first court sentences given for indictable offences, Table 8 shows the method of trial and disposition of cases, and Table 9 shows persons charged and convicted of indictable crimes according to trial court.

Two kinds of sentences maintain for a certain period of time a relationship between the person dealt with by the court and the legal institutions of a community—probation and commitment to an institution. There are several types of institutions to which a person can be committed, such as penitentiaries, reformatories, gaols and industrial farms. Theoretically, every institution has a specific purpose which is supposed to be taken into account when arriving at a legal decision. In practice, however, the availability of an institution in a given community is a factor in determining the decision rendered by the court.

**7.—First Court Sentences Given for Indictable Offences, by Province, 1964**

Sentence	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Option of fine.....	257	11	414	343	1,933	3,481	605	433	1,332	1,286	29	10,124
Gaol—												
Under one year.....	190	14	380	354	2,623	2,868	652	799	1,373	1,956	97	11,306
One year or over.....	42	1	14	42	357	500	163	186	591	642	13	2,551
Reformatory.....	1	—	4	6	77	1,816	75	—	—	93	—	2,072
Penitentiary—												
Under two years.....	—	—	4	17	4	64	1	—	1	9	—	100
Two years and under five.	33	7	202	79	691	722	188	121	255	338	6	2,642
Five years and under ten..	2	—	9	7	111	140	10	11	30	56	1	377
Ten years and under four-	—	—	2	3	37	31	—	3	1	8	—	86
teen.....	—	—	1	1	24	10	—	—	—	2	1	39
Fourteen years or over....	—	—	1	1	10	17	1	2	2	1	—	35
Life.....	—	—	—	—	—	3	1	1	1	24	—	30
Preventive.....	—	—	—	—	—	—	—	—	—	—	—	—
Death.....	—	—	—	2	1	—	—	—	1	1	—	5
Suspended sentence without probation.....	63	7	171	179	1,441	1,061	566	256	472	665	22	4,903
Suspended sentence with probation.....	237	8	268	165	1,361	3,350	494	287	549	1,107	1	7,827
<b>Totals.....</b>	<b>825</b>	<b>48</b>	<b>1,470</b>	<b>1,199</b>	<b>8,670</b>	<b>14,063</b>	<b>2,757</b>	<b>2,099</b>	<b>4,608</b>	<b>6,188</b>	<b>170</b>	<b>42,097</b>

**8.—Method of Trial of Persons Charged with Indictable Offences, showing Disposition of Cases, by Sex and by Province, 1964**

Method of Trial and Sex	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
<b>By Judge and Jury—</b>												
Convicted.....												
M.....	3	—	18	15	117	284	47	32	16	126	4	662
F.....	—	—	2	1	—	19	1	2	2	3	—	30
Acquitted.....												
M.....	4	—	8	4	34	113	10	15	4	30	5	227
F.....	—	—	—	—	3	9	1	1	2	8	—	24
Detained because of insanity.....												
M.....	—	—	1	—	5	4	—	—	—	2	1	13
F.....	—	—	—	—	—	1	—	—	—	2	—	—

**8.—Method of Trial of Persons Charged with Indictable Offences, showing Disposition of Cases, by Sex and by Province, 1964—concluded**

Method of Trial and Sex	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
<b>By Judge and Jury—concluded</b>												
Disagreement of jury...M.	—	—	1	—	1	3	—	—	—	2	1	8
F.	—	—	1	—	—	—	—	—	—	—	—	1
Stay of proceedings....M.	—	—	—	—	1	1	—	—	—	15	—	17
F.	—	—	—	—	—	—	—	—	—	—	—	—
No Bill.....M.	—	—	—	—	—	34	—	—	—	—	—	34
F.	—	—	—	—	—	—	—	—	—	—	—	—
<b>By a Judge without Jury—</b>												
Convicted.....M.	—	4	76	18	1,121	308	57	67	157	151	8	1,967
F.	—	—	1	—	40	19	2	2	7	10	—	81
Acquitted.....M.	1	3	21	3	333	97	13	26	52	44	—	593
F.	—	—	—	—	18	14	2	3	2	2	—	41
Detained because of insanity.....M.	—	—	—	—	2	1	—	—	—	1	—	4
F.	—	—	—	—	—	—	—	—	—	—	—	—
Stay of proceedings....M.	—	—	—	—	—	4	3	4	9	4	—	24
F.	—	—	—	—	—	—	—	—	2	1	—	3
<b>By a Magistrate with Consent—</b>												
Convicted.....M.	420	19	697	499	3,367	7,008	1,066	1,001	2,174	2,430	76	18,757
F.	27	—	27	22	158	467	67	57	111	207	5	1,148
Acquitted.....M.	12	—	71	10	189	749	21	23	74	244	—	1,393
F.	4	—	5	—	14	71	3	1	9	28	—	135
Detained because of insanity.....M.	—	—	4	—	3	8	4	1	3	7	—	30
F.	—	—	1	—	—	—	—	—	—	—	—	1
Stay of proceedings....M.	—	—	—	—	1	1	29	—	—	65	2	98
F.	—	—	—	—	—	—	4	—	—	22	—	26
<b>By a Magistrate, Absolute Jurisdiction—</b>												
Convicted.....M.	321	21	596	591	3,281	4,796	1,318	827	1,883	2,834	73	16,541
F.	54	4	53	53	586	1,162	199	111	258	427	4	2,911
Acquitted.....M.	11	—	65	28	244	815	8	34	85	166	3	1,459
F.	1	—	6	1	35	133	—	3	10	29	—	218
Detained because of insanity.....M.	1	—	2	1	6	1	1	—	—	2	—	14
F.	—	—	—	—	—	—	—	—	—	1	—	1
Stay of proceedings....M.	—	—	—	—	—	—	40	—	—	32	—	72
F.	—	—	—	—	—	—	7	—	—	8	—	15
<b>Totals, Persons Charged</b>	<b>859</b>	<b>51</b>	<b>1,656</b>	<b>1,246</b>	<b>9,559</b>	<b>16,122</b>	<b>2,903</b>	<b>2,210</b>	<b>4,860</b>	<b>6,903</b>	<b>182</b>	<b>46,551</b>
<b>Totals, Persons Convicted.....</b>	<b>825</b>	<b>48</b>	<b>1,470</b>	<b>1,199</b>	<b>8,670</b>	<b>14,063</b>	<b>2,757</b>	<b>2,099</b>	<b>4,608</b>	<b>6,188</b>	<b>170</b>	<b>42,097</b>



**9.—Persons Charged and Convicted of Indictable Offences according to Trial Court, by Province, 1963 and 1964**

Province or Territory and Item	1963					1964				
	Persons Charged and Convicted by—					Persons Charged and Convicted by—				
	Police Magistrate and Municipal Court	Juvenile or Family Court	County Court	Higher Court	Total	Police Magistrate and Municipal Court	Juvenile or Family Court	County Court	Higher Court	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland—										
Charged.....	839	42	1	20	902	791	60	1	7	859
Convicted.....	813	42	1	16	872	762	60	—	3	825
Prince Edward Island—										
Charged.....	56	—	9	2	67	43	1	7	—	51
Convicted.....	55	—	8	1	64	43	1	4	—	48
Nova Scotia—										
Charged.....	1,572	9	64	39	1,684	1,523	4	99	30	1,656
Convicted.....	1,427	8	53	28	1,516	1,369	4	78	19	1,470
New Brunswick—										
Charged.....	1,283	4	11	17	1,315	1,200	5	26	15	1,246
Convicted.....	1,260	4	10	9	1,283	1,160	5	22	12	1,199
Quebec—										
Charged.....	7,319	1,723	1,480	145	10,667	6,271	1,615	1,531	142	9,559
Convicted.....	6,707	1,718	1,142	123	9,690	5,787	1,606	1,171	106	8,670
Ontario—										
Charged.....	16,117	81	707	174	17,079	15,103	108	748	163	16,122
Convicted.....	14,133	74	472	106	14,785	13,333	100	519	111	14,063
Manitoba—										
Charged.....	2,006	256	34	48	2,344	2,338	429	76	60	2,903
Convicted.....	1,916	255	26	34	2,231	2,227	423	59	48	2,757
Saskatchewan—										
Charged.....	1,828	2	106	50	1,986	2,053	5	101	51	2,210
Convicted.....	1,754	2	77	36	1,869	1,991	5	68	35	2,099
Alberta—										
Charged.....	4,308	43	49	264	4,664	4,606	1	31	222	4,860
Convicted.....	4,085	43	37	218	4,383	4,425	1	20	162	4,608
British Columbia—										
Charged.....	5,440	769	255	181	6,645	5,464	1,038	246	155	6,903
Convicted.....	4,902	752	197	114	5,965	4,874	1,024	180	110	6,188
Yukon and Northwest Territories—										
Charged.....	255	—	2	6	263	163	—	8	11	182
Convicted.....	252	—	1	3	256	158	—	8	4	170
Canada—										
Charged.....	41,023	2,929	2,718	946	47,616	39,555	3,266	2,874	856	46,551
Convicted.....	37,304	2,898	2,024	688	42,914	36,129	3,229	2,129	610	42,097

**Subsection 2.—Young Adult Offenders (16-24 Years) Convicted of Indictable Offences**

Attention has been focused in recent years on the needs of the young adult offenders of from 16-24 years of age who constitute a promising field for modern reception and diagnostic facilities equipped with educational, trade training and other formative disciplines. While young men and women in this age group account for under 18.7 p.c. of the total population 16 years of age or over, they form over half the criminal population

committing indictable offences. The group includes some of the most daring offenders who already may be experienced criminals as well as first offenders likely to be turned from crime by further education and training. There were 22,744 young adult offenders in 1964, a total little changed from the previous year.

#### 10.—Young Adult Offenders, by Age Group, Sex and Province, 1963 and 1964

Year, Age Group and Sex	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
<b>1963</b>												
16 - 17 years.....M.	173	21	307	192	1,999	2,372	292	297	609	890	18	7,170
F.	9	—	10	10	79	166	18	22	44	54	—	412
18 - 19 ".....M.	136	13	254	186	1,235	1,991	292	237	523	603	25	5,495
F.	4	—	12	12	66	152	29	21	52	28	3	379
20 - 24 ".....M.	203	8	326	298	2,126	2,748	435	409	923	1,038	56	8,570
F.	8	—	12	12	159	260	45	15	78	131	7	727
<b>Totals, 1963.....</b>	<b>533</b>	<b>42</b>	<b>921</b>	<b>710</b>	<b>5,664</b>	<b>7,689</b>	<b>1,111</b>	<b>1,001</b>	<b>2,229</b>	<b>2,744</b>	<b>109</b>	<b>22,753</b>
<b>1964</b>												
16 - 17 years.....M.	195	14	267	188	1,715	2,371	446	331	763	1,162	17	7,469
F.	8	—	13	9	96	167	21	25	3	85	2	429
18 - 19 ".....M.	113	3	262	195	1,019	1,781	364	318	604	670	13	5,342
F.	8	—	14	11	65	152	39	23	49	55	1	417
20 - 24 ".....M.	166	5	327	252	1,849	2,634	471	447	972	1,088	42	8,253
F.	23	—	15	18	202	283	52	33	85	122	1	834
<b>Totals, 1964.....</b>	<b>513</b>	<b>22</b>	<b>898</b>	<b>673</b>	<b>4,946</b>	<b>7,398</b>	<b>1,393</b>	<b>1,177</b>	<b>2,476</b>	<b>3,182</b>	<b>76</b>	<b>22,744</b>

#### 11.—Young Adult Offenders Convicted of Indictable Offences, by Class of Offence and Sex, 1963 and 1964

Class of Offence	1963		1964	
	Males	Females	Males	Females
	No.	No.	No.	No.
<b>Criminal Code</b>				
<b>Class I.—Offences against the Person.....</b>	<b>2,279</b>	<b>69</b>	<b>2,447</b>	<b>69</b>
Abduction and kidnapping.....	15	—	31	1
Assault, causing bodily harm, common, on police and obstruction.....	1,583	54	1,812	49
Offences against females <sup>1</sup> .....	324	6	295	3
Causing death by criminal negligence, <sup>2</sup> manslaughter and murder.....	55	—	49	—
Attempted murder, causing bodily harm and danger.....	46	3	49	6
Duties tending to preservation of life.....	5	—	1	—
Other offences against the person.....	251	6	210	10
<b>Class II.—Offences against Property with Violence.....</b>	<b>6,074</b>	<b>94</b>	<b>5,947</b>	<b>118</b>
Breaking and entering a place, extortion and robbery.....	6,074	94	5,947	118
<b>Class III.—Offences against Property without Violence...</b>	<b>10,496</b>	<b>1,104</b>	<b>10,367</b>	<b>1,194</b>
Fraud and false pretences.....	580	116	563	106
Having in possession.....	1,128	52	1,184	48
Theft.....	8,788	936	8,620	1,040
<b>Class IV.—Malicious Offences against Property.....</b>	<b>591</b>	<b>14</b>	<b>603</b>	<b>21</b>
Arson and other fires.....	57	3	43	4
Other interference with property.....	534	11	560	17

For footnotes, see end of table.

### 11.—Young Adult Offenders Convicted of Indictable Offences, by Class of Offence and Sex, 1963 and 1964—concluded

Class of Offence	1963		1964	
	Males	Females	Males	Females
	No.	No.	No.	No.
<b>Criminal Code—concluded</b>				
<b>Class V.—Forgery and Other Offences Relating to Currency</b> .....	<b>440</b>	<b>71</b>	<b>450</b>	<b>78</b>
Forgery and uttering forged documents.....	419	69	433	78
Offences relating to currency.....	21	2	17	—
<b>Class VI.—Other Offences</b> .....	<b>1,309</b>	<b>118</b>	<b>1,197</b>	<b>157</b>
Criminal negligence in operation of motor vehicles.....	25	—	18	—
Driving while ability to drive is impaired.....	90	3	39	—
Driving while intoxicated.....	5	—	—	—
Gaming, betting and lotteries.....	19	5	33	1
Keeping bawdy houses.....	7	61	5	92
Various other offences.....	1,163	49	1,102	64
<b>Totals, Criminal Code</b> .....	<b>21,189</b>	<b>1,470</b>	<b>21,011</b>	<b>1,637</b>
<b>Federal Statutes</b>				
Narcotic Control Act.....	35	47	42	42
Other statutes.....	11	1	11	1
<b>Totals, Federal Statutes</b> .....	<b>46</b>	<b>48</b>	<b>53</b>	<b>43</b>
<b>Grand Totals</b> .....	<b>21,235</b>	<b>1,518</b>	<b>21,064</b>	<b>1,680</b>

<sup>1</sup> Includes abortion, indecent assault on female, sexual intercourse and attempt, incest, procuring, rape, attempted rape and seduction. <sup>2</sup> Includes causing death in the operation of a motor vehicle or otherwise.

### 12.—Disposition of Sentences for Indictable Offences, by Sex, 1963 and 1964

Disposition of Sentences	1963				1964			
	16-24 Years		25 Years or Over		16-24 Years		25 Years or Over	
	M.	F.	M.	F.	M.	F.	M.	F.
	No.	No.	No.	No.	No.	No.	No.	No.
Suspended sentence.....	2,276	259	1,854	465	2,195	338	1,830	540
Probation.....	5,669	490	1,283	256	5,787	491	1,253	296
Fine.....	3,741	361	5,012	984	3,918	444	4,608	1,154
Gaol.....	6,650	311	7,363	411	6,398	310	6,735	414
Reformatory.....	1,400	80	545	52	1,417	71	546	38
Penitentiary.....	1,496	17	1,878	50	1,348	26	1,887	48
Death.....	3	—	8	—	1	—	4	—

### Subsection 3.—Convictions for Summary Conviction Offences

Offences punishable on summary conviction are triable by magistrates and justices of the peace under Part XXIV of the Criminal Code (SC 1953-54, c. 51) or under the provincial summary conviction Acts as the case may be. Data relating to these offences are based on convictions; no information is available on either the number of persons involved in these offences or the number of charges. In these cases, following arrest or summons to appear in court, the accused person must be tried by a magistrate or justice of the peace without the intervention of a jury. Such cases are heard in police court with a minimum of delay.



## 13.—Convictions for Summary Conviction Offences, by Type, 1963 and 1964

Type of Offence	1963	1964	Type of Offence	1963	1964
No.	No.	No.	No.	No.	No.
<b>Criminal Code</b> .....	<b>99,892</b>	<b>95,246</b>	<b>Federal Statutes—concluded</b>		
Attempts, conspiracies, accessories, counselling.....	266	181	Food and Drugs.....	122	152
Attempt to commit suicide.....	276	298	Harbour Board and Merchant Seamen's.....	15,188	15,996
Bawdy house.....	589	468	Immigration.....	23	125
Causing disturbance by being drunk.....	3,787	2,715	Income Tax.....	5,992	7,152
Common assault.....	9,651	8,404	Indian—		
Communicating venereal disease.....	13	9	Intoxication.....	3,539	3,519
Contempt of court.....	43	30	Other.....	1,495	1,863
Corrupting morals.....	381	425	Juvenile Delinquents—		
Cruelty to animals.....	80	104	Adults who contribute to delinquency.....	1,602	1,722
Damage not exceeding \$50 and other interference with property.....	4,277	4,137	Incorrigibility.....	1,245	1,090
Disorderly conduct.....	16,277	15,842	Inducing child to leave home, etc.....	54	16
Duty of persons to provide necessities.....	2,156	1,966	Sexual immorality.....	191	611
Duty to safeguard dangerous places.....	16	37	Lord's Day.....	83	214
Fraudulently obtaining food or lodging.....	916	1,003	National Defence.....	101	97
Fraudulently obtaining transportation.....	149	149	Railway.....	1,084	1,053
Gaming, betting, lotteries.....	2,954	2,131	Unemployment Insurance.....	6,071	4,330
Intimidation.....	674	707	Weights and Measures.....	114	146
Killing or injuring bird or animal other than cattle.....	66	34	Other federal statutes.....	3,526	4,508
Motor Vehicle—			<b>Provincial Statutes</b> .....	<b>1,028,608</b>	<b>1,161,982</b>
Criminal negligence in operation.....	789	1,068	Children of Unmarried Parents.....	637	680
Dangerous driving.....	1,748	2,101	Deserted Wives and Children's Maintenance.....	6,326	7,270
Dangerous operation of vessel, etc.....	189	163	Game and Fisheries.....	7,285	6,950
Driving while impaired.....	25,747	25,966	Highway Traffic—		
Driving while disqualified.....	6,229	6,265	Driving without care.....	48,547	48,913
Driving while intoxicated.....	1,408	1,431	Other traffic.....	749,169	862,868
Failing to stop at scene of accident.....	5,626	5,217	Liquor Control—		
Motor vehicle equipped with smoke screen.....	47	44	Intoxication.....	106,500	111,622
Taking motor vehicle without consent.....	1,717	1,837	Other.....	73,807	87,078
Offensive weapons.....	1,288	1,134	Master and Servant.....	1,179	1,208
Personating peace officer.....	84	116	Medical, Dentistry and Pharmacy.....	139	201
Recognizance, breach of.....	1,680	1,914	Mental Diseases.....	1,004	853
Vagrancy.....	6,452	5,483	Prairie and Forest Fire Prevention.....	159	137
Other Criminal Code.....	4,317	3,867	Protection of Children.....	2,303	2,186
<b>Federal Statutes</b> .....	<b>42,656</b>	<b>45,073</b>	Public Health.....	93	582
Customs.....	293	304	School Laws.....	633	260
Excise.....	1,221	1,609	Other provincial statutes.....	25,827	31,174
Fisheries.....	712	561	<b>Municipal By-laws</b> .....	<b>300,055</b>	<b>331,631</b>
			Intoxication.....	16,021	16,983
			Traffic.....	232,010	261,611
			Other.....	52,024	53,037
			<b>Prohibited Parking</b> .....	<b>1,982,454</b>	<b>2,219,532</b>
			<b>Totals, Convictions</b> .....	<b>3,453,665</b>	<b>3,853,464</b>

## Subsection 4.—Appeals

Appeal is an important safeguard in Canada's legal system and the conviction of a jury or judge may be appealed on the grounds that the verdict was unreasonable, that there was a wrong decision on some question of law or that there was a miscarriage of justice. In 1964 there were 2,536 appeals in indictable cases disposed of by the courts, of which 127 were Crown appeals and 2,409 appeals of the accused. Of the Crown appeals, 46 were from acquittal and 81 from sentence; of the appeals of the accused, 842 were from conviction and 1,567 from sentence. Appeals in summary conviction cases disposed of by the courts numbered 1,867 in 1964. Of these, 159 were appeals of the informant and 1,708 appeals of the accused. The informant appeals comprised 137 from acquittal and 22 from sentence and appeals of the accused comprised 1,471 from conviction and 237 from sentence.

## Section 3.—Juvenile Delinquents

*Juvenile Delinquent*, as defined in the Juvenile Delinquents Act, means any child who violates any provision of the Criminal Code or of any federal or provincial statute, or of any by-law or ordinance of any municipality, or who is guilty of sexual immorality or any similar form of vice, or who is liable by reason of any other act to be committed to an industrial school or juvenile reformatory under the provision of any federal or provincial statute. The commission by a child of any of these acts constitutes an offence known as a delinquency.

The upper age limit of children brought before the juvenile courts in the provinces varies. The Act defines a child as meaning any boy or girl apparently or actually under the age of 16 years, or such other age as may be directed in any province. In Prince Edward Island, Nova Scotia, New Brunswick, Ontario and Saskatchewan under 16 is the official age; in Alberta under 16 for boys and under 18 for girls; in Newfoundland under 17; in Quebec, Manitoba and British Columbia under 18 years. In the interests of uniformity, it has been the practice of the Dominion Bureau of Statistics to publish information about juvenile delinquents 16 years of age or over in the annual report on *Statistics of Criminal and Other Offences* and to publish data relating to those under 16 years of age in a report entitled *Juvenile Delinquents*. In 1964, 3,528 juveniles 16 and 17 years of age were found delinquent in those provinces where the upper age limit is under 17 or under 18 years of age.

Included in the statistics of juvenile delinquents are cases (alleged as well as adjudged) which were brought before the courts and dealt with formally. A case was counted separately each time a child appeared before the court for a new delinquency or delinquencies. In instances where multiple delinquencies were dealt with at one court appearance, only one delinquency—the most serious—was selected for tabulation. Delinquencies reported as informal cases by the courts were not included nor were cases of children presenting conduct problems which were not brought to court or which were dealt with by the police, social agencies, schools, or youth-serving agencies. Thus, community facilities for dealing with children's problems may have an influence on the number of cases referred to court and, therefore, an effect on the statistics of juvenile delinquents.

#### 14.—Juveniles brought before the Courts, by Province, and Total Dismissed and Delinquent, 1960-64

Province or Territory	1960	1961	1962	1963	1964	Percentage Change, 1963-64
	No.	No.	No.	No.	No.	
Newfoundland.....	421	413	494	523	556	+ 6.3
Prince Edward Island.....	35	52	60	66	32	-51.5
Nova Scotia.....	792	637	941	928	883	- 4.9
New Brunswick.....	481	511	450	472	573	+21.4
Quebec.....	2,795	3,101	3,078	2,909	2,998	+ 3.1
Ontario.....	6,698	7,682	8,815	9,813	10,422	+ 6.2
Manitoba.....	1,212	993	1,014	909	976	+ 7.4
Saskatchewan.....	275	329	379	339	332	- 2.1
Alberta.....	1,189	1,307	1,269	1,357	1,718	+26.6
British Columbia.....	2,111	1,949	2,157	2,570	2,940	+14.4
Yukon Territory.....	—	2	50	—	—	—
Northwest Territories.....	—	—	—	—	30	...
<b>Canada.....</b>	<b>16,009</b>	<b>16,976</b>	<b>18,707</b>	<b>19,886</b>	<b>21,460</b>	<b>+ 7.9</b>
Dismissed.....	517	570	843	776	612	-21.1
Adjourned <i>sine die</i> .....	1,527	1,191	1,256	1,554	1,483	- 4.6
Delinquent.....	13,965	15,215	16,608	17,556	19,365	+10.3





**18.—Juvenile Delinquents, by Group of Offence, and Ratio per 100,000 Population  
7-15 Years of Age, 1955-64**

Year	Delinquencies against the Person		Delinquencies against Property with Violence		Delinquencies against Property without Violence		Wilful and Forbidden Acts in respect of Certain Property		Forgery and Delinquencies relating to Currency		Other Delinquencies		Total Convictions	
	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population
1955...	181	7	1,548	61	2,767	108	629	25	29	1	1,871	73	7,025	275
1956...	250	9	1,888	69	3,572	131	839	31	39	1	2,397	88	8,985	329
1957...	254	9	2,005	70	3,764	131	994	35	28	1	2,634	92	9,679	338
1958...	346	12	2,268	76	4,436	148	985	33	36	1	3,320	111	11,391	381
1959...	265	9	2,408	78	4,748	153	952	31	27	-	3,286	106	11,686	377
1960...	369	11	2,953	92	5,694	177	1,272	40	36	1	3,641	113	13,965	434
1961...	382	11	3,511	103	6,435	189	1,248	37	33	1	3,606	106	15,215	447
1962...	460	13	3,563	102	7,129	204	1,420	41	49	1	3,987	114	16,608	475
1963...	490	14	3,864	108	7,386	206	1,630	45	48	1	4,138	115	17,556	489
1964...	525	14	4,361	119	8,364	229	1,654	45	51	1	4,410	120	19,365	528

**19.—Juvenile Delinquents classified by Type of Delinquency, 1960-64**

Delinquency	1960	1961	1962	1963	1964
	No.	No.	No.	No.	No.
Manslaughter and murder and causing death by criminal negligence.....	—	4	7	6	1
Murder, attempt.....	—	1	2	1	2
Rape and attempt, sexual intercourse and incest.....	5	5	12	6	4
Indecent assault (male and female).....	96	70	127	101	134
Assault, causing bodily harm and danger.....	42	36	43	62	60
Common assault.....	193	223	209	280	278
Interfering with transportation facilities.....	—	3	—	—	5
Other offences against the person.....	28	40	60	34	41
Breaking and entering a place.....	2,886	3,415	3,427	3,817	4,246
Robbery and extortion.....	66	96	136	47	115
Theft and having in possession.....	5,488	6,076	6,787	7,100	8,004
False pretences and fraud and corruption.....	35	35	34	50	54
Arson.....	91	74	94	80	106
Other interference with property.....	1,181	1,174	1,326	1,550	1,548
Forgery and delinquencies relating to currency.....	36	33	49	48	51
Incorrigibility and vagrancy.....	900	842	652	1,057	789
Immorality.....	258	238	223	176	186
Various other delinquencies.....	2,655	2,850	3,420	3,141	3,741
<b>Totals.....</b>	<b>13,965</b>	<b>15,215</b>	<b>16,608</b>	<b>17,556</b>	<b>19,365</b>

### 20.—Percentages of Delinquent Boys and Girls, by Age Group, 1963 and 1964

Age Group	1963			1964		
	Boys	Girls	Both Sexes	Boys	Girls	Both Sexes
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
7-12 years.....	24.3	12.3	22.9	24.6	14.4	23.6
13-15 ".....	74.8	86.8	76.2	74.7	84.5	75.7
Not given.....	0.9	0.9	0.9	0.7	1.1	0.7
Totals.....	100.0	100.0	100.0	100.0	100.0	100.0

**21.—Age, Sex and School Grade of Delinquent Boys and Girls, 1964**

(B=Boys; G=Girls)

Age	School Grades																Total Delinquents			
	Elementary										Secondary		Auxiliary		Not Given					
	1-4		5		6		7		8											
	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G		
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.		
7 years.....	37	4	—	—	—	—	—	—	—	—	—	—	—	—	3	1	40	5		
8 ".....	194	11	—	—	—	—	—	—	—	—	—	—	—	—	9	—	203	11		
9 ".....	389	22	26	3	—	—	—	—	—	—	—	—	—	—	16	1	431	26		
10 ".....	476	27	167	13	40	2	3	—	—	—	—	—	5	1	49	3	740	46		
11 ".....	343	11	362	23	281	23	49	2	8	—	1	—	9	1	55	6	1,108	66		
12 ".....	234	6	370	20	533	52	377	60	81	7	6	1	23	3	99	12	1,723	161		
13 ".....	122	7	300	21	539	66	824	123	603	100	104	26	24	2	198	32	2,714	377		
14 ".....	70	7	200	22	446	55	980	110	1,283	177	891	163	45	11	305	59	4,220	604		
15 ".....	68	9	133	18	315	43	723	88	1,395	190	2,566	393	59	8	625	117	5,884	866		
Not given.....	6	—	2	1	3	—	1	—	3	1	7	1	—	—	94	21	116	24		
Totals.....	1,939	104	1,560	121	2,157	241	2,957	383	3,373	475	3,575	584	165	26	1,453	252	17,179	2,186		

**22.—Disposition of Delinquents, by Type of Sentence, 1955-64**

Year	Reprimanded		Probation of Court		Protection of Parents		Fined or Made Restitution		Detained Indefinitely		Sent to Training School		Final Disposition Suspended		Corporal Punishment		Mental Hospital	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
1955.....	181	2.6	3,067	43.7	365	5.2	1,064	15.1	50	0.7	1,180	16.8	1,118	15.9	—	—	—	—
1956.....	359	4.0	3,155	35.1	404	4.5	2,015	22.4	30	0.3	1,440	16.0	1,577	17.6	—	—	—	—
1957.....	460	4.7	3,822	39.5	300	3.1	2,261	23.4	63	0.7	1,563	16.1	1,202	12.4	1	—	7	0.1
1958.....	504	4.4	5,728	50.3	294	2.6	1,624	14.3	13	0.1	1,822	16.0	1,389	12.2	3	—	14	0.1
1959.....	236	2.0	6,151	52.6	412	3.5	1,810	15.5	9	0.1	1,678	14.4	1,381	11.8	—	—	9	0.1
1960.....	442	3.2	7,413	53.1	518	3.7	2,289	16.4	42	0.3	1,791	12.8	1,456	10.4	—	—	14	0.1
1961.....	544	3.6	7,341	48.2	644	4.2	2,148	14.1	89	0.6	1,974	13.0	2,466	16.2	—	—	9	0.1
1962.....	697	4.2	8,297	53.1	369	2.2	2,219	13.4	89	0.5	1,862	11.2	2,533	15.3	—	—	12	0.1
1963.....	977	5.6	8,292	47.2	462	2.6	2,460	14.0	99	0.6	2,043	11.6	3,180	18.1	—	—	43	0.3
1964.....	1,062	5.5	9,624	49.7	612	3.2	2,247	11.6	139	0.7	1,967	10.1	3,699	19.1	—	—	15	0.1

**Section 4.—Correctional Institutions and Training Schools****Subsection 1.—Statistics of Correctional Institutions and Training Schools**

Correctional institutions may be classified under four headings: (1) Penitentiaries—operated for adult offenders by the Federal Government in which, generally speaking, sentences of over two years are served; (2) Reformatories—operated for adult offenders by the provinces in which individual sentences of up to two years are served; (3) Common Gaols—operated for adult offenders by the provinces or counties in which sentences of up to two years can be served but in which, generally speaking, short-term sentences are served; and (4) Training Schools—operated by the provinces or private organizations under provincial charter for juvenile offenders serving indefinite terms up to the legal age for children in the particular province.

There is a limited amount of statistical information available with respect to these types of institution. "In custody" figures shown in Table 23 for penitentiaries refer only to those persons under sentence, but the figures for admissions include those received from courts as well as by transfer from other penitentiaries and by cancellation of tickets-

of-leave and paroles. Figures for releases include expiry of sentences, transfers between penitentiaries, releases on ticket-of-leave and parole, deaths, pardons and releases on court order. In custody figures for provincial and county institutions may include, in addition to those serving sentences, persons awaiting trial, on remand for sentence or psychiatric examination, awaiting appeal or deportation, any others not serving sentence and, for training school population, juveniles on placement.

Population figures in Tables 23 and 24 are for a given day of the year, which is Mar. 31 except for Quebec gaols where populations are counted as of Dec. 31. These figures represent, in effect, a yearly census of correctional institutions and, as such, are not indicative of the daily average population count. For instance, if an abnormal number of commitments is made to a certain institution on or just prior to Mar. 31, the result will be an unrepresentative population total for the institution in that year.

With regard to the fluctuations that might have occurred during the year between census days, the total population of correctional institutions has shown a general increase since Mar. 31, 1959; totals for training schools and provincial adult institutions have shown a tendency to level off or decline slightly but penitentiary population has increased steadily.

### 23.—Population in Penitentiaries, Years Ended Mar. 31, 1960-64

Item	1960	1961	1962	1963	1964
	No.	No.	No.	No.	No.
In custody at beginning of year.....	6,295	6,344	6,738	7,156	7,219
Received during year.....	4,523	4,973	5,541	6,539	6,439
Discharged during year.....	4,474	4,579	5,123	6,476	6,007
In custody at end of year.....	6,344	6,738	7,156	7,219	7,651

### 24.—Populations in Reformatories and Gaols and in Training Schools, as at Mar. 31, 1960-64

Type of Institution	1960	1961	1962	1963	1964
	No.	No.	No.	No.	No.
<b>Reformatories and Gaols—</b>					
Reformatories for men.....	3,769	4,012	3,670	3,919	3,977
Reformatories for women.....	144	180	171	171	171
Common gaols.....	6,983	7,629	8,225	8,665	8,411
<b>Totals, Reformatories and Gaols.....</b>	<b>10,896</b>	<b>11,821</b>	<b>12,066</b>	<b>12,755</b>	<b>12,559</b>
<b>Training Schools—</b>					
Training schools for boys.....	2,423	2,362	2,435	2,466	2,662
Training schools for girls.....	965	1,019	1,090	1,072	1,416
<b>Totals, Training Schools.....</b>	<b>3,388</b>	<b>3,401</b>	<b>3,525</b>	<b>3,538</b>	<b>4,078<sup>1</sup></b>

<sup>1</sup> Eight additional training schools reported in 1964.

### Subsection 2.—The Canadian Penitentiary Service\*

The Penitentiary Service operates under the Penitentiary Act (SC 1960-61, c. 53) and is under the jurisdiction of the Solicitor General of Canada. It is responsible for all federal penitentiary institutions and for the care and training of persons sentenced or

\* Prepared under the direction of A. J. MacLeod, Commissioner of Penitentiaries, Ottawa.



committed thereto. The Commissioner of Penitentiaries, under the direction of the Solicitor General, has control and management of the Service and all matters connected therewith. In the year ended Mar. 31, 1966, the federal penitentiary system consisted of six maximum security, four medium security and fifteen minimum security institutions, all for males; one prison for women; one maximum security prison camp for males of the Freedomite Doukhobor Sect; one security institution for elderly recidivists; and three Correctional Staff Colleges.

The six maximum security institutions receive inmates sentenced by the courts to imprisonment for terms of from two years to life. These are located at New Westminster, B.C., Prince Albert, Sask., Stony Mountain, Man., Kingston, Ont., St. Vincent de Paul, Que., and Dorchester, N.B. Persons sentenced to penitentiary terms in Newfoundland are held in the provincially operated institution at St. John's, under financial arrangements authorized by Sect. 14 of the Penitentiary Act (SC 1960-61, c. 53).

The medium and minimum security institutions and the camps receive inmates transferred from the maximum security (receiving) institutions on the basis of their suitability for special forms of training, including vocational training. Of the medium security institutions, two—Collin's Bay Penitentiary and the Joyceville Institution—are within a few miles of Kingston. The other two—the Federal Training Centre and the Leclerc Institution—are close to St. Vincent de Paul.

Eight minimum security correctional camps are operated as extensions of a main institution in their respective areas. These are located at William Head and Agassiz, B.C.; Beaver Creek and Landry Crossing near Bracebridge and Petawawa, Ont.; Gatineau (Gatineau Park) and Valleyfield, Que.; Blue Mountain near Gagetown, N.B.; and Springhill, N.S. Six minimum security farm annexes operate as extensions of the penitentiaries at Dorchester, St. Vincent de Paul, Collin's Bay, Joyceville, Stony Mountain and Prince Albert, respectively. There is also a minimum security industrial satellite at St. Vincent de Paul.

The Prison for Women at Kingston, Ont., receives inmates transferred upon committal to penitentiary in any part of Canada. Before Dec. 1, 1960, it operated as a detached portion of Kingston Penitentiary.

The special security Prison Camp for Freedomites who have been sentenced to imprisonment in penitentiary is located near Agassiz, B.C., and is called Mountain Prison. When the sentences of the female Doukhobor prisoners were completed, part of Mountain Prison was converted to an institution for older recidivists.

Six new institutions were in various stages of construction during 1965-66. They are located as follows: medium security institutions at Springhill, N.S., Cowansville, Que., Warkworth, Ont., and Drumheller, Alta.; a Special Correctional Unit at St. Vincent de Paul, Que.; and an institution for Narcotic Drug Addicts at Matsqui, B.C.

The three Correctional Staff Colleges—one at Kingston, one at St. Vincent de Paul and one at New Westminster—are operated for the training of recruits and for the advanced training of penitentiary officers. The Kingston College serves English-speaking or bilingual officers, the St. Vincent de Paul College is primarily for French-speaking officers from all parts of Canada, and the Western Staff College trains the recruits for the institutions in the Western Region. These Staff Colleges provide excellent facilities for Service-wide conferences of institutional heads and other special groups of officers.

The Headquarters of the Service is located in Ottawa. Regional directorates have been established at New Westminster, B.C., Kingston, Ont., and St. Vincent de Paul, Que., for the Western, Ontario and Quebec areas, respectively.

**Subsection 3.—The National Parole System\***

Parole is a means by which an inmate in any correctional institution in Canada, if he gives definite indication of his intention to reform, can be released from prison. The purpose of parole is the protection of society through the rehabilitation of the inmate. It is essential for the public to understand that the true purpose of punishment should be the reformation of the offender and not just vengeance or retribution but, since the Parole Board is as much concerned with the protection of society as with the reformation of the inmate, it recognizes that the welfare of an individual inmate must not be allowed to impair the success of the parole system or the public safety.

It is the function of the Parole Board to select those inmates who show some sincere intention to reform and to assist them in doing so by granting parole. The inmate then is allowed to serve the remainder of his sentence in society, but under supervision. He is subject to restrictions and conditions as to his conduct and behaviour, designed for his welfare and the protection of others. The Board is not a reviewing authority and is not concerned with the propriety of the conviction or the length of the sentence but only with the problem of deciding in each case whether or not there is chance of reformation. Parole is not a matter of clemency and is not granted on compassionate or humanitarian grounds but only if there appears to be at least a reasonable chance that the inmate will lead a law-abiding life. The treatment and training program in the institution is a vital part of the correctional process and parole is an extension of this training outside the institution. It is not a matter of pampering prisoners but of trying to give as many of them as possible a chance to rehabilitate themselves.

The National Parole Board, composed of a chairman and four members (one woman), was formed in January 1959. It operates under the authority of the Parole Act (SC 1958, c. 38) which came into force on Feb. 15, 1959, replacing the Ticket-of-Leave Act. The Board has jurisdiction over any adult inmate of any prison in Canada convicted of an offence against an Act of the Parliament of Canada; it also has jurisdiction to revoke or suspend any sentence of whipping or any order made under the Criminal Code prohibiting any person from operating a motor vehicle.

The decision of the Board with respect to any one inmate is based on reports it receives from the police, the trial judge or magistrate and from various people at the institution who deal with him. Reports are also obtained, when available, from a psychologist or psychiatrist and, if necessary, a community investigation is conducted to secure as much information as possible about his family and background, his work record and his position in the community. From these reports, an assessment is made to determine whether or not he has changed his attitude and is likely to lead a law-abiding life.

An inmate need not obtain the services of a lawyer to apply for parole. He may apply by sending a letter to the Board and is assisted in preparing such an application at the institution or another person may apply on his behalf. The Board automatically reviews all sentences of over two years. As soon as an application is received, investigation is begun and the results presented to the Board for decision. All applications and reports are processed by the Parole Board staff at Ottawa but regional officers, of whom there are 55 stationed at 16 centres across the country, interview applicants for parole in their respective areas, giving them an opportunity of making verbal representations to a representative of the Board. The regional officers submit to the Board a report of each interview with an assessment of the inmate's suitability for parole.

A person on parole is under the care of a supervisor, usually an after-care agency worker or a probation officer, who reports to the regional officer. If he violates the conditions of

\* Prepared by T. G. Street, Chairman, National Parole Board, Ottawa.

his parole or commits a further offence or misbehaves in any manner, the Board may revoke his parole and return him to the institution to serve that part of his sentence outstanding at the time his parole was granted. If a parolee commits an indictable offence, his parole is automatically forfeited and he is returned to the institution to serve the unexpired balance of his sentence plus any new term to which he is sentenced for the commission of the new offence. The regional officer may also issue a Warrant of Suspension and have a parolee placed in custody if it is necessary to prevent a breach of any term or condition of the parole. These officers are thus able to exercise effective and adequate control over all parolees in their respective areas.

During the seven years of its operation, the Parole Board has granted parole to 14,169 inmates. Of these 1,571 were returned to prison but only 779 of them forfeited their paroles for commission of an indictable offence; the other 792 had their paroles revoked for misbehaviour or a minor offence. Thus there has been a success rate of almost 90 p.c., over the seven-year period, of men and women who have succeeded in abiding by the terms of their parole.

## Section 5.—Police Forces and Crime Statistics

**Organization of Police Forces.**—The police forces of Canada are organized in three groups: (1) the federal force, which is the Royal Canadian Mounted Police; (2) provincial police forces—the Provinces of Ontario and Quebec have their own provincial police forces but all other provinces engage the services of the Royal Canadian Mounted Police to perform parallel functions within their borders; and (3) municipal police forces—most urban centres of reasonable size maintain their own police force or engage the services of the provincial police, under contract, to attend to police matters. In addition, the Canadian National Railways, the Canadian Pacific Railway Company and the National Harbours Board have their own police forces.

*The Royal Canadian Mounted Police.*—The Royal Canadian Mounted Police is a civil force maintained by the Federal Government. It was established in 1873 as the North-West Mounted Police for service in what was then the North-West Territories and, in recognition of its services, was granted the use of the prefix "Royal" by King Edward VII in 1904. Its sphere of operations was expanded in 1918 to include all of Canada west of Port Arthur and Fort William and in 1920 it absorbed the Dominion Police, its headquarters was transferred from Regina to Ottawa and its title was changed to Royal Canadian Mounted Police.

The Force is under the control of the Solicitor General of Canada and is headed by a Commissioner who holds the rank and status of a Deputy Minister. Officers are commissioned by the Crown and are selected from the non-commissioned ranks. The Force has complete jurisdiction in the enforcement of the federal statutes. By arrangement between the federal and provincial governments, it enforces the provincial statutes and the Criminal Code in all provinces exclusive of Ontario and Quebec and under special agreement it polices some 122 municipalities. It is the sole police force in the Yukon and North-west Territories, where it also performs various administrative duties on behalf of certain departments of the Federal Government. It maintains liaison officers in London and Washington and represents Canada in the International Criminal Police Organization, which has headquarters in Paris.

Of the Force's 17 divisions, 12 are actively engaged in the work of law enforcement, as are some 43 subdivisions and 638 detachments. The five remaining divisions are "Headquarters", "Depot" and "N", which are maintained as training centres, and "Marine" and



"Air", which support the operations of the land divisions. A teletype system links the widespread divisional headquarters with the administrative centre at Ottawa and a network of fixed and mobile radio units operates within the provinces. Focal point of the Force's criminal identification work is the Headquarters Identification Branch; its services, together with those of the divisional and subdivisinal units and the four Crime Detection Laboratories, are available to police forces throughout Canada. The Force operates the Canadian Police College at which Force members and selected representatives of other Canadian and foreign police forces may study the latest advances in the fields of crime prevention and detection.

The uniform strength of the Force at Mar. 31, 1966 was 7,518, including marine constables and special constables, at which time it maintained some 2,090 motor vehicles, 20 aircraft, 52 ships and boats, 300 sleigh dogs, 26 police service dogs and 240 horses.

*Quebec Provincial Police Force.*—The Quebec Provincial Police Force is responsible for the maintenance of peace, order and public safety in the province, and for the prevention and investigation of criminal offences and of violation of all laws of the province.

The province is divided into two almost equal parts known as the Montreal Division and the Quebec Division. The Montreal Division is divided into three subdivisions with headquarters at Granby, Hull and Montreal. The Quebec Division is also divided into three subdivisions with headquarters at Chicoutimi, Quebec and Rimouski. There are 113 detachments throughout the province—63 in the Montreal Division and 50 in the Quebec Division. The Force at the end of 1965 had 2,311 regular members—officers, non-commissioned officers and constables.

The Quebec Provincial Police Force is under the command of a Director General who is assisted by an officer holding the rank of Deputy Director General. Each Division is headed by an Assistant Director. A commissioned officer is in command of each subdivision.

*Ontario Provincial Police Force.*—The Ontario Provincial Police Force with a total authorized strength of over 3,900 (1966), enforces federal and provincial law in areas that do not maintain a police department and on all King's Highways. The Force is administered, from General Headquarters at Toronto, by a Commissioner who has the rank and status of a Deputy Minister under the Attorney General. Other senior executive officers include two Deputy Police Commissioners and five Assistant Commissioners. The Force has two principal divisions—Operations and Services—which are administered under the supervision of the Deputy Commissioner, Operations and Deputy Commissioner, Services, respectively. In turn, the five Divisions at the next level are administered by their respective Assistant Commissioners: Assistant Commissioner, Field; Assistant Commissioner, Traffic; Assistant Commissioner, Administration; Assistant Commissioner, Staff Services; and Assistant Commissioner, Special Services. Specialized branches under Special Services include Criminal Investigation, Liquor Law Enforcement, Precious Metals Theft, Anti-gambling, Anti-rackets, Auto Theft, and Intelligence Branches. Under Administration, the Central Records Branch offers a 24-hour, seven-day-week service to all police departments in Ontario on such matters as fingerprints records, criminal records, dry cleaning and laundry mark identification, photographic service, stolen and recovered property lists.

In addition to policing those parts of Ontario that are without municipal police forces, the Ontario Provincial Police Force is responsible for providing services to the municipal forces in specialized areas, including the investigation of serious crime and, upon request, supplies sufficient manpower to ensure proper policing within the municipalities in emergency situations.

In the field, there are 217 detachments controlled through 17 district headquarters located at Chatham, London, Burlington, Niagara Falls, Toronto, Mount Forest, Barrie, Peterborough, Belleville, Perth, Long Sault, North Bay, Sudbury, Sault Ste. Marie, South Porcupine, Port Arthur and Kenora. In addition, there are 38 municipalities policed under special contract.

The Force operates one of the largest frequency-modulation radio networks in the world, with 78 fixed radio stations and more than 950 radio-equipped mobile units, including motorcycles, marine units and aircraft. The Force also operates an interprovincial telecommunications network connecting all 17 districts as well as other police departments on a local, national and international basis. Because of territorial peculiarities, the northern districts augment their normal transportation facilities by the use of snowmobiles, swamp buggies, dog teams and a variety of rail transport facilities.

In addition to regular constable recruitment, the Force has a cadet program, making it possible for qualified young men to create for themselves a career in a long-established police force. A recent important development in the progress of this Crown Force occurred when legislative enactment provided that all ranking officers from inspector up to and including the Commissioner, receive the Queen's Commission in the same manner as the Armed Forces.

*Municipal Police Forces.*—Provincial legislation makes it mandatory for cities and towns to furnish adequate municipal policing for the maintenance of law and order in their communities. Also, all villages and townships or parts of townships that have a population density and a real property assessment sufficient to warrant maintenance of a police force, and have been so designated by Order in Council, are made responsible for the adequate policing of their municipalities.

**Uniform Crime Reporting.**—A new method of reporting police statistics (police administration, crime and traffic enforcement statistics), known as the Uniform Crime Reporting Program, was started on Jan. 1, 1962. The program was developed by the Dominion Bureau of Statistics in co-operation with the Canadian Association of Chiefs of Police Committee on Uniform Crime Reporting. Historically, the police have compiled selected statistics to meet their own needs and have been prepared to give an account of crimes in their jurisdictions. However, the definitions and methods for collecting these statistics were not uniform and the data could not be expressed with consistency on a national, provincial or local basis. With the development of the Uniform Crime Reporting Program, meaningful statistical aggregates became possible. The police were supplied with a manual of instructions containing standard definitions for the reporting of police administration, crime and traffic enforcement statistics on specially designed statistical forms to be submitted to the DBS.

*Police Personnel.*—As shown in Table 25, police personnel in Canada numbered 37,935 at the end of 1965, including 32,010 sworn-in policemen, 5,551 other full-time employees serving as clerks, technicians, artisans, commissionaires, guards, special constables, etc., and 374 cadets. The ratio of police personnel per 1,000 population was 1.9 and the ratio of police was 1.6. Provincial ratios for police personnel ranged from 1.0 to 5.0 per 1,000 persons and for police only from 0.9 to 4.9. In 12 selected metropolitan areas there were 13,929 police personnel including 12,096 police and 1,833 cadets and other full-time employees. Total municipal police personnel numbered 22,112 made up of 20,975 in municipal forces, 1,045 Royal Canadian Mounted Police and 92 provincial police under municipal contracts.

There were two policemen killed by criminal action in 1965 and three lost their lives accidentally while on duty. Police transport facilities at the end of the year included 5,978 automobiles, 905 motorcycles, 584 other motor vehicles, 363 boats, 20 aircraft, 319 horses and 82 service dogs.

### 25.—Police Personnel, by Type of Force, 1964 and 1965

Force	1964				1965			
	Police	Cadets	Other Full-Time Employees	Total	Police	Cadets	Other Full-Time Employees	Total
	No.	No.	No.	No.	No.	No.	No.	No.
<b>Royal Canadian Mounted Police—</b>								
Actual strength.....	7,103	—	1,950	9,053	7,398	—	2,064	9,462
Authorized strength.....	7,238	—	1,987	9,225	7,518	—	2,157	9,675
Engagements.....	587	—	401	988	738	—	361	1,099
Retirements and other separations.....	318	—	254	572	432	—	256	688
<b>Ontario Provincial Police—</b>								
Actual strength.....	2,690	46	508	3,244	2,797	54	618	3,469
Authorized strength.....	2,690	46	508	3,244	2,797	54	658	3,509
Engagements.....	401	36	162	599	260	30	230	520
Retirements and other separations.....	130	3	112	245	153	22	120	295
<b>Quebec Provincial Police—</b>								
Actual strength.....	1,954	—	553	2,507	2,163	—	612	2,775
Authorized strength.....	2,027	—	553	2,580	2,311	—	612	2,923
Engagements.....	331	—	122	453	344	—	155	499
Retirements and other separations.....	125	—	101	226	133	—	96	229
<b>Municipal Police (excl. RCMP and OPP contracts)—</b>								
Actual strength.....	17,673	333	2,090	20,096	18,448	320	2,207	20,975
Authorized strength.....	17,928	336	2,070	20,334	18,927	331	2,185	21,443
Engagements.....	1,663	256	571	2,490	2,139	260	559	2,958
Retirements and other separations.....	997	142	418	1,557	1,229	258	443	1,930
<b>Canadian National Railways Police—</b>								
Actual strength.....	570	—	22	592	579	—	24	603
Authorized strength.....	581	—	22	603	586	—	24	610
Engagements.....	66	—	5	71	59	—	3	62
Retirements and other separations.....	43	—	6	49	50	—	1	51
<b>Canadian Pacific Railway Company Police—</b>								
Actual strength.....	518	—	26	544	525	—	26	551
Authorized strength.....	534	—	26	560	540	—	26	566
Engagements.....	97	—	9	106	84	—	4	88
Retirements and other separations.....	94	—	6	100	77	—	4	81
<b>National Harbours Board Police—</b>								
Actual strength.....	97	—	—	97	100	—	—	100
Authorized strength.....	97	—	—	97	103	—	—	103
Engagements.....	6	—	—	6	16	—	—	16
Retirements and other separations.....	11	—	—	11	13	—	—	13
<b>Totals, All Forces—</b>								
Actual strength.....	30,605	379	5,149	36,133	32,010	374	5,551	37,935
Authorized strength.....	31,095	382	5,249 <sup>1</sup>	36,726 <sup>1</sup>	32,782	385	5,662	38,829
Engagements.....	3,151	292	1,270	4,713	3,640	290	1,312	5,242
Retirements and other separations....	1,718	145	897	2,760	2,087	280	920	3,287

<sup>1</sup> Includes civilians paid by municipalities.



**26.—Police Personnel, by Sex and Type of Force, 1964 and 1965**

(Actual strength)

Force	Police		Cadets		Other Full-Time Employees		Totals	
	M.	F.	M.	F.	M.	F.	M.	F.
	No.	No.	No.	No.	No.	No.	No.	No.
<b>1964</b>								
Royal Canadian Mounted Police.....	7,103	—	—	—	706	1,244	7,809	1,244
Ontario Provincial Police.....	2,690	—	46	—	242	266	2,978	266
Quebec Provincial Police.....	1,944	10	—	—	334	219	2,278	229
Municipal Police (excl. RCMP and OPP contracts).....	17,498	175	316	17	1,361	729	19,175	921
Canadian National Railways Police.....	564	6	—	—	10	12	574	18
Canadian Pacific Railway Company Police	518	—	—	—	12	14	530	14
National Harbours Board Police.....	97	—	—	—	—	—	97	—
<b>1965</b>								
Royal Canadian Mounted Police.....	7,398	—	—	—	752	1,312	8,150	1,312
Ontario Provincial Police.....	2,797	—	54	—	298	320	3,149	320
Quebec Provincial Police.....	2,152	11	—	—	343	269	2,495	280
Municipal Police (excl. RCMP and OPP contracts).....	18,262	186	307	13	1,415	792	19,984	991
Canadian National Railways Police.....	574	5	—	—	10	14	584	19
Canadian Pacific Railway Company Police	525	—	—	—	12	14	537	14
National Harbours Board Police.....	100	—	—	—	—	—	100	—

*Crime Statistics.*—Table 27 shows the number of crimes dealt with by the police in 1965, including offences under the Criminal Code, federal statutes, provincial statutes and municipal by-laws; offences cleared by charge and otherwise; and the number of adults and juveniles charged. Offences reported or known to the police but proved unfounded are not shown in the table but numbered 43,438, including 36,618 under Criminal Code classifications, 1,782 under federal statutes, 3,860 under provincial statutes and 1,178 under municipal by-laws, excepting traffic.

During 1965, the police reported 53,204 offences committed against the person, including 243 murders, 7,443 rape and other sexual offences, and 45,373 offences of wounding and other assaults (not indecent); all offences against the person resulted in the charging of 22,933 persons, 1,405 of them juveniles. During the year there were 378,124 cases of robbery, theft and other offences against property, resulting in 74,276 persons charged, 24,658 of them juvenile males and 2,062 juvenile females; 32,401 cases of fraud, false pretences, forgery, etc.; 1,864 of prostitution; 2,156 gaming and betting; 3,275 offensive weapons; and 151,655 other Criminal Code offences. Of the 29,614 federal statute offences reported, 655 were under the Narcotic Control Act and 113 under the controlled drug part of the Food and Drugs Act; these two classifications resulted in the charging of 637 persons.

Provincial and territorial fire marshals and commissioners reported 1,600 suspected or known incendiary offences, of which 176 were proved unfounded; 399 offences were reported cleared by charge, resulting in 342 adults and 175 juveniles being charged.

The number of motor vehicles stolen was 37,419 or 558.3 per 100,000 vehicles registered; 34,325 or 91.7 p.c. of these vehicles were recovered. Police were asked to locate 17,570 missing adults and 27,313 missing juveniles; 16,970 adults and 27,124 juveniles were found. The number of drownings reported by the police was 1,359.

## 27.—Crime Statistics, by Type of Offence, 1964 and 1965

Year and Offence	Actual Offences <sup>1</sup>	Offences Cleared		Persons Charged			
		By Charges	Other-wise	Adults		Juveniles	
				Male	Female	Male	Female
1964	No.	No.	No.	No.	No.	No.	No.
<b>Criminal Code</b> .....	<b>626,038</b>	<b>167,487</b>	<b>68,777</b>	<b>124,675</b>	<b>12,689</b>	<b>33,868</b>	<b>2,741</b>
Capital murder.....	165	102	31	99	12	2	—
Non-capital murder.....	53	52	2	47	6	1	—
Attempted murder.....	121	105	8	95	8	4	1
Manslaughter.....	35	32	4	28	4	2	—
Rape.....	745	354	136	474	1	16	—
Other sexual offences.....	6,867	2,956	885	2,627	31	380	17
Wounding.....	838	475	157	400	62	40	2
Assaults (not indecent).....	40,459	16,724	14,149	15,711	801	701	47
Robbery.....	5,666	1,851	228	2,097	95	387	9
Breaking and entering.....	97,224	19,341	4,299	12,914	244	8,507	219
Theft, motor vehicle.....	39,930	9,098	1,938	6,348	163	4,207	38
Theft over \$50.....	66,934	8,763	3,576	6,776	606	1,906	99
Theft \$50 or under.....	170,685	27,212	14,912	14,528	3,604	9,803	1,277
Have stolen goods.....	6,011	5,648	191	3,633	275	822	42
Fraud.....	33,264	18,977	3,398	9,199	938	245	51
Prostitution.....	2,054	1,884	36	647	1,321	7	16
Gaming and betting.....	2,656	2,143	230	2,584	163	4	—
Offensive weapons.....	2,939	2,191	369	1,849	59	215	10
Other Criminal Code <sup>1</sup> .....	149,572	49,579	24,228	44,619	4,296	6,619	913
<b>Federal Statutes<sup>2</sup></b> .....	<b>33,168</b>	<b>23,643</b>	<b>4,351</b>	<b>19,886</b>	<b>1,232</b>	<b>1,160</b>	<b>386</b>
Narcotic Control Act.....	520	321	65	297	171	3	1
Food and Drugs Act.....	103	37	40	26	—	—	—
<b>Provincial Statutes<sup>1</sup></b> .....	<b>248,772</b>	<b>225,974</b>	<b>8,249</b>	<b>200,541</b>	<b>16,701</b>	<b>4,970</b>	<b>1,256</b>
<b>Municipal By-laws<sup>1</sup></b> .....	<b>52,316</b>	<b>34,208</b>	<b>8,680</b>	<b>30,050</b>	<b>2,828</b>	<b>1,008</b>	<b>71</b>
<b>1965</b>							
<b>Criminal Code</b> .....	<b>628,418</b>	<b>161,757</b>	<b>73,141</b>	<b>120,460</b>	<b>12,803</b>	<b>34,284</b>	<b>3,308</b>
Capital murder.....	179	118	35	100	5	7	1
Non-capital murder.....	64	58	3	43	11	4	1
Attempted murder.....	111	85	8	82	7	2	1
Manslaughter.....	34	31	3	26	6	4	—
Rape.....	641	308	116	400	—	23	1
Other sexual offences.....	6,802	2,801	993	2,386	23	344	36
Wounding.....	822	494	134	402	69	50	3
Assaults (not indecent).....	44,551	18,131	16,671	17,035	930	850	78
Robbery.....	5,576	1,662	255	1,901	125	349	20
Breaking and entering.....	96,530	18,328	4,401	12,592	303	8,375	204
Theft, motor vehicle.....	38,107	8,415	2,027	6,592	141	3,690	60
Theft over \$50.....	67,925	9,045	3,586	7,094	753	1,983	136
Theft \$50 or under.....	169,986	26,890	14,934	14,198	3,857	10,261	1,642
Have stolen goods.....	5,739	5,312	234	3,557	275	808	57
Fraud.....	32,401	18,678	3,564	8,324	984	269	60
Prostitution.....	1,864	1,705	25	459	1,274	5	25
Gaming and betting.....	2,156	1,865	89	2,462	137	6	—
Offensive weapons.....	3,275	2,500	386	2,140	82	223	3
Other Criminal Code <sup>1</sup> .....	151,655	45,331	25,677	40,664	3,821	7,031	980
<b>Federal Statutes<sup>2</sup></b> .....	<b>29,614</b>	<b>22,504</b>	<b>3,339</b>	<b>19,142</b>	<b>1,296</b>	<b>954</b>	<b>434</b>
Narcotic Control Act.....	655	382	34	368	224	7	—
Food and Drugs Act.....	113	48	20	31	7	—	—
<b>Provincial Statutes<sup>1</sup></b> .....	<b>271,857</b>	<b>250,157</b>	<b>9,588</b>	<b>221,438</b>	<b>18,975</b>	<b>7,175</b>	<b>1,651</b>
<b>Municipal By-laws<sup>1</sup></b> .....	<b>58,794</b>	<b>43,357</b>	<b>8,640</b>	<b>35,694</b>	<b>3,846</b>	<b>1,750</b>	<b>147</b>

<sup>1</sup> Except traffic.<sup>2</sup> Except traffic, Narcotic Control Act and Food and Drugs Act.

Table 28 shows that, during 1965, police departments in Canada reported 84,726 Criminal Code traffic offences, resulting in 56,130 persons charged, 1,188 of them females. Total charges reported under federal statutes, provincial statutes and municipal by-laws

numbered 1,850,508, excluding parking violations; the latter numbered 4,083,595, most of them reported by municipal police. The number of traffic accidents reported was 617,452, of which 4,109 involved fatalities, 102,727 resulted in injuries, 313,446 involved property damage of over \$100 and 197,170 involved damage of \$100 or less. There were 4,869 persons killed in traffic accidents, including 3,448 drivers and passengers, 1,254 pedestrians, 143 cyclists and 24 others; persons injured numbered 149,324.

## 28.—Traffic Enforcement Statistics, by Type of Offence, 1964 and 1965

Year and Offence	Actual Offences	Offences Cleared		Persons Charged	
		By Charge	Other- wise	Male	Female
	No.	No.	No.	No.	No.
<b>1964</b>					
<b>Criminal Code</b> .....	<b>75,837</b>	<b>51,863</b>	<b>5,283</b>	<b>51,628</b>	<b>1,056</b>
Criminal Negligence—					
Causing death.....	185	173	1	171	6
Causing bodily harm.....	64	51	2	51	—
Operating motor vehicle.....	383	309	8	287	3
Failing to stop at scene of accident.....	28,685	8,990	4,749	7,626	250
Dangerous driving.....	4,065	3,638	215	3,423	61
Driving while intoxicated.....	3,888	3,805	32	3,692	70
Driving while impaired.....	30,924	30,465	227	29,622	609
Driving while disqualified.....	7,643	7,432	49	6,756	57
<b>Federal Statutes (except parking)</b> .....	..	..	..	<b>6,066</b>	<b>1</b>
<b>Provincial Statutes (except parking)</b> .....	..	..	..	<b>1,256,147</b>	<b>1</b>
<b>Municipal By-laws (except parking)</b> .....	..	..	..	<b>372,951</b>	<b>1</b>
<b>1965</b>					
<b>Criminal Code</b> .....	<b>84,726</b>	<b>58,497</b>	<b>3,860</b>	<b>54,942</b>	<b>1,188</b>
Criminal Negligence—					
Causing death.....	197	190	—	187	5
Causing bodily harm.....	71	61	2	56	4
Operating motor vehicle.....	357	350	2	314	2
Failing to stop at scene of accident.....	33,360	9,396	3,424	7,758	292
Dangerous driving.....	5,016	4,245	161	4,048	60
Driving while intoxicated.....	3,701	3,614	39	3,530	69
Driving while impaired.....	33,878	32,707	200	31,823	685
Driving while disqualified.....	8,146	7,934	32	7,226	71
<b>Federal Statutes (except parking)</b> .....	..	..	..	<b>6,122</b>	<b>1</b>
<b>Provincial Statutes (except parking)</b> .....	..	..	..	<b>1,447,309</b>	<b>1</b>
<b>Municipal By-laws (except parking)</b> .....	..	..	..	<b>397,077</b>	<b>1</b>

<sup>1</sup> Not available, included with males.



CHAPTER X.—LAND USE AND RENEWABLE  
RESOURCE DEVELOPMENT\*

CONSPECTUS

	PAGE		PAGE
SECTION 1. LAND RESOURCES.....	440	SECTION 3. INTERNATIONAL BOARDS AND COMMISSIONS.....	443
SECTION 2. FEDERAL AGENCIES CONCERNED WITH RESOURCE USE.....	442	SECTION 4. FEDERAL AND FEDERAL-PROVINCIAL RESOURCE DEVELOPMENT PROGRAMS	445

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

Canada's era of settlement ended as the northern areas of the Prairie Provinces came under cultivation in the 1930s. Government policies, previously directed mainly toward the large-scale utilization of natural resources, have evolved toward concern with land use and the socio-economic circumstances of people involved in renewable resource-based industries. Undiscriminating land settlement policies and ill-advised individual choices had resulted in the settlement of some submarginal land throughout Canada but most notably in the southern areas of Alberta and Saskatchewan, creating requirement for land use adjustment even before settlement had been completed. Far more significant than this, however, is the technological revolution in agriculture which has occurred during the past three decades concurrently with improvements in transportation and a strong trend toward the concentration in urban centres of a growing population.

Accompanying these changes has been an altered pattern of land use resulting from individual response to economic factors; but the rate of such adjustment has not been concomitant to the magnitude of the socio-economic dislocation in rural areas. Because of this situation, and because of increased concern with forest management, water pollution control, recreational resources and wildlife management, the trend has been for a vast increase in public decision-making with respect to resource management and use. Implicit in this has been the need for improved legislative-administrative organization relative to natural resources.

One of the most important responses to this need was the "Resources for Tomorrow" Conference held in 1961 to permit examination of problems of resource use and of developing an organizational framework suited to the modern requirement for integrated, comprehensive resource-use planning for social and economic development. Subsequent to this Conference, the Canadian Council of Resource Ministers, composed of one representative from each province and one from the Federal Government, was established to perform a similar function on a continuing basis, with the aid of a Montreal-based staff. Significant among the various activities of the Council has been the planning of a further major conference on "Pollution and Our Environment", for the autumn of 1966. Earlier federal investigations of significance to the general problem of organization for resource use were: the Senate of Canada Special Committee on Land Use, established in 1957 and continuing until 1963; the House of Commons Standing Committee on Mines, Forests and

\* Prepared by D. F. Symington, Staff Consultant to the Canadian Council of Resource Ministers.

Waters; and the National Conference on Reconstruction, held in 1945. Notable among several provincial government activities along similar lines is the annual British Columbia resources conference.

Constitutionally, administration and disposition of natural resources rests mainly with the provincial governments. Under the British North America Act, fisheries were under federal jurisdiction and the federal and provincial governments shared legislative authority with respect to agriculture, international and interprovincial waters, etc., with federal legislation taking precedence over provincial legislation should conflict arise; however, subsequent interpretations of the Act have established most aspects of control of resources as being matters of provincial jurisdiction. As well, in the years following Confederation certain provinces, by agreement, assumed varying degrees of responsibility for administering the fisheries legislation and other federal resources legislation. Within this general framework, the Federal Government has taken certain steps to establish a national resources policy, to co-ordinate the activity of the various federal departments concerned with resources and relevant social and economic problems, to undertake or share in research, and to provide initiative and financial assistance in the establishment of programs of resource adjustment and development; and provincial governments have moved significantly to accommodate their administrative structures to the need for integrated, planned resource adjustment and development. Aspects of this trend to accommodate legislative-administrative organization to emerging needs will be apparent in the following descriptions of federal and federal-provincial agencies and programs. In addition, a great number of provincial programs have been instituted or strengthened, furthering the trend toward integration of activities relative to renewable natural resources.

Federal activity in resource conservation programs began before the turn of the century, starting in 1877. This included the work of the now long-disbanded Department of the Interior in the field of surveying and development of water resources in Western Canada. Later programs included those conducted under the Prairie Farm Rehabilitation Act which was enacted in 1935 to aid in the rehabilitation of drought-stricken areas of the prairies, the work on the eastern seaboard conducted under the Maritime Marshland Rehabilitation Act of 1948, water development projects under the terms of the Canada Water Conservation Assistance Act of 1953, the broad and comprehensive resource development and adjustment program being undertaken under the terms of the Agricultural Rehabilitation and Development Act of 1961, and projects under the Atlantic Development Board Act of 1962. There have been numerous programs under the International Boundary Waters Treaty Act of 1911 by the International Joint Commission established to fulfil the provisions of the treaty and the confirming Act. Over this period many projects of varying nature and scope have been undertaken under legislation such as the above and under the terms of reference of the federal and provincial government departments and agencies concerned with resource development—all toward the basic objective of achieving more effective utilization of Canada's land and water resources and the provision of a greater degree of economic stability and equitability for the rural areas of the country.

## Section 1.—Land Resources

Information available regarding Canada's land resources is shown in Table 1, where the land area is classified as occupied agricultural, forest and "other" land, the last including urban land, road allowances, grass and brush land and all waste land such as open muskeg, swamp and rock. The Department of Forestry and Rural Development estimates that about 48 p.c. of the land area of Canada is forested and, according to the Census of 1961, less than 8 p.c. is classed as occupied farm land. A great part of the 1,606,788 sq. miles of "other" land is located in the Yukon and Northwest Territories which together have a land area of 1,458,784 sq. miles. The occupied farm land in these Territories is practically nil and the forest area is estimated at 275,800 sq. miles.

## 1.—Land Area classified as Occupied Agricultural or Forest, by Province

NOTE.—Figures for occupied agricultural land were obtained from the 1961 Census; areas of forest land were compiled by the Department of Forestry and Rural Development from estimates supplied by the Forestry Service in each province.

Description	New-found-land		Prince Edward Island		Nova Scotia		New Brunswick		Quebec		Ontario		Manitoba		Saskatchewan		Alberta		British Columbia		Y.T. and N.W.T.		Canada	
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles
<b>Occupied Agricultural Land—</b>																								
Improved—Crops and summer fallow	21	615	518	763	8,218	12,868	17,061	64,223	36,038	1,380	1	141,686												
Pasture.....	6	312	199	312	3,614	5,149	1,125	2,179	2,610	554	1	16,012												
Other.....	5	28	60	72	456	785	508	970	865	121	1	3,870												
Unimproved—Forest (woodland) <sup>2</sup> .....	31	1,033	2,130	1,923	7,033	5,090	2,329	3,430	3,341	1,177	2	26,949												
Other.....	22	131	578	367	2,864	5,137	7,368	29,848	30,941	3,829	9	81,094												
<b>Totals, Occupied Agricultural Land</b>	<b>85</b>	<b>1,500</b>	<b>3,485</b>	<b>3,437</b>	<b>22,185</b>	<b>29,029</b>	<b>28,391</b>	<b>100,650</b>	<b>73,795</b>	<b>7,041</b>	<b>13</b>	<b>269,611</b>												
<b>Forest Land—</b>																								
Softwood—																								
Young growth.....	24,422	78	7,270	6,297	75,687	44,110	14,669	14,021	14,483	80,330	35,200	317,167												
Mixedwood—	5,835	396	7,789	2,889	40,922	35,925	20,366	3,413	14,042	87,786	10,000	222,363												
Young growth.....	5,403	133	5,250	7,298	47,500	24,533	5,459	12,736	12,636	—	19,800	135,748												
Merchantable.....	269	145	458	2,042	26,281	34,289	6,514	5,046	11,308	—	3,500	89,852												
Hardwood—	9	13	841	1,939	14,391	6,559	3,403	9,528	5,255	3,945	4,700	50,583												
Merchantable.....	244	11	45	952	14,344	17,961	4,767	1,773	13,728	7,953	2,500	64,278												
Unclassified <sup>3</sup> .....	2,680	37	427	2,470	1,500	1,191	3,011	3,122	45,120	28,397	—	87,955												
<b>Totals, Productive Forest Land.....</b>	<b>33,862</b>	<b>813</b>	<b>15,080</b>	<b>23,887</b>	<b>220,625</b>	<b>164,568</b>	<b>58,189</b>	<b>50,239</b>	<b>116,572</b>	<b>208,411</b>	<b>75,700</b>	<b>967,946</b>												
Non-productive Forest Land <sup>4</sup> .....	53,930	121	1,194	442	157,500	97,174	64,632	67,499	41,023	59,227	200,100	742,842												
<b>Totals, Forest Land.....</b>	<b>87,792</b>	<b>934</b>	<b>16,274</b>	<b>24,329</b>	<b>378,125</b>	<b>261,742</b>	<b>122,821</b>	<b>117,738</b>	<b>157,595</b>	<b>267,638</b>	<b>275,800</b>	<b>1,710,788</b>												
<b>Net Productive Lands.....</b>	<b>33,916</b>	<b>1,850</b>	<b>16,435</b>	<b>25,401</b>	<b>235,777</b>	<b>188,597</b>	<b>84,251</b>	<b>147,459</b>	<b>187,026</b>	<b>214,275</b>	<b>75,711</b>	<b>1,210,608</b>												
<b>Other Lands<sup>5</sup>.....</b>	<b>55,199</b>	<b>213</b>	<b>2,773</b>	<b>1,992</b>	<b>130,583</b>	<b>58,411</b>	<b>62,892</b>	<b>5,224</b>	<b>20,751</b>	<b>85,777</b>	<b>1,182,973</b>	<b>1,606,788</b>												
<b>Totals, Land Area<sup>7</sup>.....</b>	<b>143,045</b>	<b>2,184</b>	<b>20,402</b>	<b>27,855</b>	<b>523,860</b>	<b>344,092</b>	<b>211,775</b>	<b>220,182</b>	<b>248,800</b>	<b>359,279</b>	<b>1,458,784</b>	<b>3,560,238</b>												

<sup>1</sup> Less than half a square mile.

<sup>4</sup> Areas incapable of producing crops of merchantable timber because of adverse climatic, soil or moisture conditions, and reserve forest lands for which no inventories are available.

<sup>2</sup> Included in *Forest Land*; duplication eliminated in the item *Net Productive Land*.

<sup>3</sup> Includes areas of recent burn, cut-over

<sup>5</sup> Includes only occupied agricultural land (less forest, woodland) plus productive forest land.

<sup>6</sup> Comprises all other

<sup>7</sup> *Net Productive Land* plus *Non-productive Forest Land* plus *Other Land*.



On the basis of information currently available, it is estimated that, in addition to the present arable land across the country, about 40,000,000 acres of virgin land can be used for arable crops if the need arises. However, most of these reserves will require clearing or other improvement measures before they can be used for agriculture. In addition to the present arable land and potentially arable land, 55,000,000 to 60,000,000 acres are suitable for wild pasture.

As the Canada Land Inventory progresses (see p. 447), a great deal of detailed information is becoming available on the land resources of the country, their present utilization and their capability.

## Section 2.—Federal Agencies Concerned With Resource Use

Numerous agencies of the Federal Government have a more or less direct concern with renewable resources. Functions vary from academic research to direct manipulation of resources in certain geographical areas. Direct action, however, is limited mainly to areas under federal jurisdiction—the Northwest Territories, Indian reservations, limited federal forest preserves, National Parks, certain international parks and waterways, certain aspects of fisheries and matters relative to public health. More usual by far than direct action by the Federal Government are federal-provincial agreements under which the Federal Government shares the costs of programs. Such aid is often conditional on the province agreeing to carry out the program in accordance with criteria established by the Federal Government. The capacity of the Federal Government to establish cost-sharing programs is inherent in its broad fiscal powers and in its research and data-gathering programs that provide a basis for broader assessment of issues and alternatives.

Federal agencies whose activities impinge fairly directly on renewable resource development and use are as follows:—

CANADA DEPARTMENT OF AGRICULTURE—Research Branch, Economics Branch, Prairie Farm Rehabilitation Administration, and Information Division

DEPARTMENT OF FISHERIES—Conservation and Protection Service, Resource Development Service, Information and Consumer Service, and Economics Service

DEPARTMENT OF FORESTRY AND RURAL DEVELOPMENT—Directorate of Program Co-ordination, Information and Technical Services Division, Forest Products Research Laboratory, ARDA Administration, Maritime Marshlands Rehabilitation Administration, and Eastern Rockies Forest Conservation Board

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT—Council of the Northwest Territories, Natural and Historic Resources Branch (including the Canadian Wildlife Service), Northern Administration Branch, and Indian Affairs Branch

DEPARTMENT OF PUBLIC WORKS—Harbours and Rivers Engineering Branch, Development Engineering Branch and Economic Studies Branch

DEPARTMENT OF TRANSPORT—Marine Works Branch, Marine Hydraulics Branch, and Meteorological Branch

DEPARTMENT OF NATIONAL HEALTH AND WELFARE—Occupational Health Division, and Public Health Engineering Division

DEPARTMENT OF FINANCE—Economic Analysis and Government Finance Division, Resources and Development Division, and a Division concerned with Taxation, Federal-Provincial Relations and Pensions and Social Insurance

DEPARTMENT OF VETERANS AFFAIRS—Veterans' Land Administration

DEPARTMENT OF ENERGY, MINES AND RESOURCES—currently being organized into four Groups concerned with research, water management, energy development and mineral development, which will include agencies under the former Department of Mines and Technical Surveys, i.e., Surveys and Mapping Branch, Geological Survey of Canada Branch, Geographical Branch, Marine Sciences Branch, and will also include water and resources agencies transferred from the former Department of Northern Affairs and National Resources

NATIONAL RESEARCH COUNCIL OF CANADA

NATIONAL ENERGY BOARD

ECONOMIC COUNCIL OF CANADA

ATLANTIC DEVELOPMENT BOARD.

Various Crown corporations, credit agencies, advisory committees and boards, and quasi-governmental organizations also have interests in the fields of resource development, including:—

FARM CREDIT CORPORATION  
CANADIAN COMMITTEE ON FRESHWATER FISHERIES RESEARCH  
FISHERIES RESEARCH BOARD OF CANADA  
NORTHERN CANADA POWER COMMISSION  
ADVISORY COMMITTEE ON NORTHERN DEVELOPMENT  
ADVISORY COMMITTEE ON WATER USE POLICY  
CENTRAL MORTGAGE AND HOUSING CORPORATION  
NATIONAL HARBOURS BOARD  
ST. LAWRENCE SEAWAY AUTHORITY  
MUNICIPAL DEVELOPMENT LOAN BOARD  
NORTHERN TRANSPORTATION COMPANY  
INTERDEPARTMENTAL ADVISORY COMMITTEE ON FORESTRY STATISTICS  
INTERDEPARTMENTAL CO-ORDINATING COMMITTEE FOR ARDA  
NATIONAL COMMITTEE FOR THE INTERNATIONAL HYDROLOGIC DECADE.

The Dominion Bureau of Statistics has, of course, functions relevant to nearly all aspects of the national life, including resources. The above agencies are not identified with a particular department function more or less autonomously but are usually associated with a Minister of the Crown for purposes of reporting to Parliament (see pp. 142-150). Although each of these agencies carries out programs bearing on the use and development of natural resources, direct unilateral action is unusual except relative to lands and waters under the jurisdiction of the Federal Government. Major exceptions are the Prairie Farm Rehabilitation Administration programs and significant federal programs for the conservation and development of the various fisheries resources.

Major items of federal legislation relative to renewable resources include:—

The Department of Agriculture Act  
The Prairie Farm Rehabilitation Act  
The Farm Credit Act  
The Department of Fisheries Act  
The Forestry Development and Research Act  
The Agricultural and Rural Development Act  
The Department of Northern Affairs and National Resources Act  
The National Parks Act  
The Migratory Birds Convention Act  
The International River Improvements Act  
The Dominion Water Power Act  
The Canada Water Conservation Assistance Act  
The Atlantic Provinces Power Development Act  
The Navigable Waters Protection Act  
The Veterans' Land Act  
The Economic Council of Canada Act  
The National Energy Board Act  
The National Harbours Board Act  
The St. Lawrence Seaway Authority Act  
The Municipal Development and Loan Act.

### Section 3.—International Boards and Commissions

The continental context of Canadian resource management is implicit in the purposes of the various international boards and commissions in which Canada participates. Of the 35 or more, some 25 are concerned with water; most of the remainder have to do with fisheries.

THE INTERNATIONAL JOINT COMMISSION was established to fulfil the provisions of the International Boundary Waters Treaty of 1909 between the United States, Great Britain and Canada. Three commissioners were appointed by the President of the United States

and three by the Government of Canada. The Commission deals with the use, obstruction and diversion of boundary waters and rivers crossing the International Boundary. It conducts investigations on water use problems with international implications and reports its findings with recommendations to both governments.

International boards of control which report to the International Joint Commission are: a ten-member International St. Lawrence Board of Control, concerned with levels of Lake Ontario and the regulation of outflow from the lake; a two-member St. Croix Board, concerned with water levels and supervision of dam construction; the Lake of the Woods Board, the Lake Superior Board, the Rainy Lake Board and the Kootenay Board, all of which are concerned with water levels; a two-member Columbia River Board, concerned with the effects of the Grand Coulee dam; a four-member Souris River Board, concerned with allocation of water; and a five-member Niagara Board, concerned with levels of Grass Island Pool and the Lake Erie ice boom. Functions similar to those of the Boards are carried out by two accredited officers relative to measurement and apportionment of waters of the St. Mary and Milk Rivers. Also reporting to the International Joint Commission are five international engineering boards for the St. John, St. Croix, Souris and Red, Pembina and Columbia Rivers. A seven-member Technical Advisory Board on Air Pollution is concerned with air pollution by ships plying the Detroit River. An Advisory Board on Control of Pollution of Boundary Waters, reporting to the International Joint Commission, is concerned with the connecting channels of the Great Lakes, and other boards concerned with pollution are: the Advisory Board on Pollution Control-St. Croix River, the International Red River Pollution Board, the International Lake Erie Water Pollution Board and the International Lake Ontario-St. Lawrence Water Pollution Board. The eight-member International Great Lakes Levels Board is concerned with investigation and study of water levels of international or boundary waters, reporting to the International Joint Commission.

THE INTERNATIONAL NORTH PACIFIC FISHERIES COMMISSION, composed of four members each from Canada, the United States and Japan, operates to fulfil the terms of the International Convention for the High Seas Fisheries of the North Pacific Ocean, the objective of which is to achieve maximum sustained yield in non-territorial waters by co-ordination of the studies necessary to determine appropriate application of treaty principles. THE GREAT LAKES FISHERIES COMMISSION, composed of two national sections of three members each, formulates and co-ordinates research programs and recommends programs for the eradication or control of sea lamprey populations. Responsibility for Canada's treaty obligations is shared by arrangement between the Federal Government and the Government of Ontario. THE NORTHWEST ATLANTIC FISHERIES COMMISSION operates under the International Convention for the Northwest Atlantic Fisheries signed by Canada, the United States, the United Kingdom, France, Spain, Denmark, Portugal, Iceland, Norway, Italy, East Germany and the U.S.S.R. All contracting governments are represented on the Commission and panels have been established with jurisdiction over defined areas of particular interest to some signatories. The Commission has no regulatory powers but conducts scientific investigations and recommends measures to maintain stocks of fish. THE NORTH PACIFIC FUR SEALS COMMISSION operates under the Interim Convention on Conservation of North Pacific Fur Seals signed by Canada, the United States, Japan and the U.S.S.R., undertaking research, recommending enforcement measures required to eliminate pelagic sealing on the high seas, and overseeing the apportionment of skins from the Pribilof, Commander and Robben Islands. THE INTERNATIONAL WHALING COMMISSION, composed of representatives of Australia, Brazil, Argentina, France, South Africa, the United States, the United Kingdom, Canada, Norway, New Zealand, Iceland, Japan, Panama, Mexico and Denmark, has power to amend whaling rules and regulations of the International Convention, and to recommend new regulations with respect to the conservation and use of the resource. THE ROOSEVELT-CAMPOBELLO INTERNATIONAL PARK COMMISSION is concerned with the administration and development of the Campobello Island estate of the late Franklin D. Roosevelt as an international park.



## Section 4.—Federal and Federal-Provincial Resource Development Programs

### Water Development

Since 1935, the Prairie Farm Rehabilitation Administration (PFRA) has provided engineering and financial assistance in respect of some 91,000 small dams and dugouts (small artificial ponds for water collection) to supply water for livestock, irrigation and domestic use. In the main, such works serve individual farmers but some serve groups of farmers or communities. The PFRA provides engineering services and usually pays about 50 p.c. of the construction costs, for a total cost of nearly \$24,650,000.

Six minor irrigation projects in Saskatchewan and one larger one in Alberta provide water for 160,000 acres of land, with benefits to about 1,000 farmers. Major irrigation projects include the St. Mary Irrigation Project, jointly undertaken by the Federal Government and the Government of Alberta in 1946. The St. Mary Dam, completed in 1951, impounds water from the Belly and Waterton Rivers, providing sufficient water to irrigate approximately half a million acres. The South Saskatchewan River Development Project now under construction involves building of a main dam 210 feet high and 16,700 feet long—the largest rolled-earth dam in Canada and one of the largest in the world. Located between the towns of Outlook and Elbow, this dam will create a reservoir 140 miles long with a total capacity of 8,000,000 acre feet of water (usable storage of 2,700,000 acre feet). The project will provide water to irrigate 500,000 acres of land, the power potential is 475,000 kilowatts, and the artificial lake will have considerable recreational potential. A second, smaller dam adjacent to the height of land between the South Saskatchewan and Qu'Appelle Rivers will divert water into the Qu'Appelle-Assiniboine system to provide much-needed water supplies for irrigation and the considerable urban areas of the watershed. The cost of developing the main reservoir is \$100,000,000, of which the provincial government is contributing \$25,000,000. By the spring of 1966, construction of the two dams was nearly completed and Federal Government expenditures amounted to \$101,000,000 for construction costs alone.

Land reclamation projects have been carried out by the PFRA in Manitoba along the Assiniboine River between Portage la Prairie and Headingley, at various points in the Interlake Region, and along the Northwest Escarpment. The Assiniboine River project includes creation of a large reservoir near Shellmouth and construction of a diversion canal near Portage la Prairie to carry floodwaters to Lake Manitoba. Construction of the main dam began in 1964.

Smaller irrigation and water-supply projects assisted by PFRA number 4,989; most of them serve individual farmers but a number serve adjacent farms or small communities and 60 of them provide substantial water supplies for various uses. Since the inception of the program, some \$8,213,000 has been spent by PFRA on such projects.

Under the provisions of the Atlantic Development Board Act of 1962, amended in 1963, a \$100,000,000 Atlantic Development Fund was established to support projects which would contribute to the growth and development of the economy of the Atlantic region. Among the projects initiated during the Board's first three years of operation were a number relative to water use for power production and for industry, the most notable being a \$20,000,000 grant toward the \$113,000,000, 600,000-kilowatt Mactaquac dam in New Brunswick and a similar grant toward Newfoundland's \$60,000,000, 224,000-kilowatt Bay d'Espoir hydro-electric project. The Board also assisted in developing water supplies to meet the needs of industries—mainly fish-packing plants—in some 30 communities, and committed \$2,000,000 toward abatement of industrial pollution in inland waters of the region.

The program under the Agricultural Rehabilitation and Development Act (ARDA) included, during the first three years of the program to Mar. 31, 1965, some 207 soil and water conservation projects for which the Federal Government shared the costs to the extent of \$12,394,000; the projects consist mainly of drainage and dyking of potentially arable land.

Under the Water Conservation Assistance Act of 1953, which enables federal participation up to 37½ p.c. of the cost of dams and other major water projects, three water conservation programs have been initiated in Ontario—the Ausable River, Upper Thames and Metropolitan Toronto and Region. The over-all cost is estimated at \$34,500,000, of which the Federal Government is committed to pay \$13,000,000.

Other federal agencies and programs (federal and federal-provincial) concerned with water are: the Fraser River Board, which carries out research in co-operation with British Columbia on flood control, hydro-power development and the like; the Prairie Provinces Water Board, comprised of one member from each of the Prairie Provinces and two from the Federal Government to recommend on allocation of water from interprovincial streams; the Nelson River Investigation, established in 1963 to study power sites on the river and make recommendations for their development; the Nelson River Programming Board and Administrative Committee; the Greater Winnipeg Floodway Program to construct a floodway past Winnipeg at a total cost of \$63,000,000 of which the Federal Government will contribute \$37,000,000; the Ottawa River Engineering Board, a joint Ontario, Quebec and federal organization for hydrologic study of the river; and a considerable number of varied hydrologic and water quality studies conducted by the Department of Fisheries, the Canada Department of Agriculture, the Department of National Health and Welfare, the National Research Council, the Department of Transport, the Department of Energy, Mines and Resources, the Department of Forestry and Rural Development and several other agencies.

### **Lands, Forests and Wildlife**

The Prairie Farm Rehabilitation Act of 1935 provided for rehabilitation of areas subject to drought and wind erosion in the Prairie Provinces and in 1937 was amended to broaden its scope to include land utilization and resettlement. In the main, the PFRA's land use programs have involved the establishment of community pastures on land submarginal for cereal crop production, and over the years this program has resulted in the establishment of 84 community pastures with a total acreage of 2,325,000 at a total cost of \$9,274,000. The PFRA also operates tree nurseries at Indian Head and Sutherland in Saskatchewan, which distributed more than 10,000,000 trees to farmers during 1965-66.

The Agricultural Rehabilitation and Development Act, proclaimed in 1961, arose out of recognition of a national interest in achieving better land use, improving the viability of farm units at present uneconomic, and of improving employment and income opportunities in rural areas. In many areas of Canada, income is unacceptably low and land use faulty or inefficient. To some considerable degree these economic, social and conservation problems have been caused by farm mechanization which places smaller, less-mechanized farmers at a disadvantage; a notable symptom of this is the decrease in the number of farms in Canada from about three quarters of a million in 1931 to less than half a million at present—a trend that is continuing.

The Act, amended in 1966 as the Agricultural and Rural Development Act and supplemented by the Fund for Rural Development Act of 1966, is enabling legislation intended to be complementary and supplementary to existing federal and provincial legislation in respect of renewable resources and rural social and economic development; to aid in correlation and expansion of existing programs; and to fill gaps. As such it has considerable potential as an instrument for programs of alternate land use, soil and water conservation, development of rural income and employment opportunities, and for research. ARDA is a federal-provincial program which operated from its inception to Mar. 31, 1965 under a federal-provincial General Agreement, and after that time under the Rural Development Agreement covering the period 1965-70. Under the General Agreement, ARDA-approved projects involving a federal share totalling \$34,517,000, of which \$13,484,000 was expended during the period. The federal share is usually in the order of 50 p.c. of total cost. The Rural Development Agreement provides for the expenditure of \$175,000,000 during the



1965-70 period, \$50,000,000 of which may be used to finance major projects in special rural development areas. During 1965-66, the Federal Government had committed \$18,427,000 to 332 projects.

The Canada Land Inventory being co-ordinated by the ARDA Administration has been made possible by extensive soil classification work in Canada over the past half-century. The co-operative Soil Surveys, which have been under way since 1935, are staffed by soil specialists of federal and provincial governments and universities and are supported by all senior governments. The Soil Surveys have mapped most of the agricultural land of Canada, classifying soils according to their inherent characteristics. The Geographical Branch of the now Department of Energy, Mines and Resources has conducted a second type of land classification according to present use, and various agencies, both federal and provincial, have provided information on the social and economic factors of land use. The Canada Land Inventory carries out a third type of land classification—according to its assessed capability for different uses, i.e., agriculture, forestry, recreation and wildlife, in and adjacent to the settled portions of Canada. Lands are being classified according to physical capability, present use, and socio-economic factors relative to their present use. The vast amount of information obtained will be stored on computer tapes, analysed and published in map or other form in such a way that the Inventory will become a working tool in resource use and rural development programs throughout Canada. Approximately 100 agencies of the 11 senior governments are involved in the Inventory, as well as numerous universities, non-government organizations and private companies or individuals. By late 1966, the agriculture and forestry phases of the Inventory had been nearly completed and substantial progress had been achieved in the wildlife and recreation phases.

In addition, other federal agencies and federal and federal-provincial programs are concerned with land and land-based resources. The Department of Indian Affairs and Northern Development engages in such diverse activities as the administration of National Parks, the administration of the resources of the Yukon and Northwest Territories and the administration of wildlife, including a considerable research program relative to wildlife and the administration of the Migratory Birds Convention Act. Among the programs are the Wildlife Inventory Program in which joint studies are carried out informally, e.g., the waterfowl inventory conducted by the Federal Government, the United States Fish and Wildlife Service, Newfoundland and the five westernmost provinces; the caribou inventory by the Federal Government and the Governments of Alberta, Saskatchewan, Manitoba, Quebec and Newfoundland; the Trans-Canada Highway Compounds and Picnic Areas Program established in 1958 without Ontario and Quebec; a significant program of acquisition of wetlands waterfowl habitat areas; and Fur Conservation Agreements between the Federal Government and Ontario, Manitoba and Saskatchewan for the construction of water control works, mainly to improve muskrat and migratory bird habitat. The Roads to Resources program, carried out under agreements with the provinces made between 1958 and 1960, is a substantial federal-provincial program involving construction of access roads in Canada's "pioneer fringe". The Department of Forestry and Rural Development administers the Composite Forest Agreements which involve an annual allotment by the Federal Government of \$7,910,000 for purposes of inventory, fire protection, access roads and trails, and forest stand improvement. Forest products research, a joint federal-provincial-industry program of spraying to control budworm infestation of spruce forests in New Brunswick, and various other programs of research and forest stand improvement are in effect.

Notwithstanding the magnitude of these federal and federal-provincial programs, and the large number of federal agencies concerned with resource use and development in Canada, it should be noted that the provincial governments assume a role which, in total, is many times larger than that of the Federal Government.



# CHAPTER XI.—AGRICULTURE

## CONSPECTUS

	PAGE		PAGE
SECTION 1. FEDERAL GOVERNMENT IN RELATION TO AGRICULTURE.....	449	Subsection 1. Income from Farming Operations.....	466
Subsection 1. Services of the Canada Department of Agriculture.....	449	Subsection 2. Volume of Agricultural Production.....	473
SPECIAL ARTICLE: Federal Assistance in Livestock Improvement.....	453	Subsection 3. Field Crops.....	474
Subsection 2. Farm Assistance Programs...	457	Subsection 4. Livestock and Poultry.....	477
SECTION 2. PROVINCIAL GOVERNMENTS IN RELATION TO AGRICULTURE.....	463	Subsection 5. Dairying.....	483
Subsection 1. Agricultural Services.....	463	Subsection 6. Fruits, Vegetables and Other Farm Products.....	483
Subsection 2. Agricultural Schools, Colleges and Universities.....	468	Subsection 7. Prices of Agricultural Products	491
SECTION 3. STATISTICS OF AGRICULTURE.....	469	Subsection 8. Food Consumption.....	501
		SECTION 4. AGRICULTURAL STATISTICS OF THE CENSUS.....	503
		SECTION 5. INTERNATIONAL CROP STATISTICS.....	504

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

Agriculture has been and continues to be a most important part of the Canadian economy. Farm cash receipts for agricultural production in 1965 reached a total of \$3,804,000,000 but this value of primary farm production gives only a partial view of the importance of the industry. To this must be added the processing, the transportation and the myriad other allied groups that are involved in the movement and transformation of the raw product of the farm into food for Canada and for the world. Despite the fact that only about 10 p.c. of the present Canadian work force is engaged in agricultural pursuits, compared with about 25 p.c. in the mid-1940s, agricultural production has, in the same period, increased by about 40 p.c. The primary producer, the farmer, has become more efficient, producing more food with less help, and the processing industry has paralleled that increase in efficiency.

It may be said that the dominant trends in Canadian agriculture since the end of World War II have been the marked reduction in the number of farms and in the farm labour force, accompanied by increases in capital investment, in specialization, in mechanization and in output. These trends have not yet run their course so that adjustment is constantly taking place in the structural organization of agriculture at the farm level. In addition, important developments have occurred in the marketing, processing and handling of farm products and in the response of industry to serve agriculture with the necessary machinery and production supplies.

Although a great many farms have been transformed into extensive, modern, efficiently operated units, there are still large numbers that have not made this adjustment. The returns from agricultural output on these old-type farms are small and their operators often find it necessary to seek part-time employment in off-farm activities. Even on farms where adjustments have been made to larger acreages or more capital input, there is a great disparity in revenue between the smaller and larger farms. Increased productivity for the group as a whole barely meets the increased costs of modern farming. Prices of farm products generally have not risen as fast as the costs of the goods and services that farmers purchase. The impetus on the part of farmers is to continue to increase efficiency and to exert as much influence as possible in effecting higher returns for their products.

Farmer groups have entered extensively into the marketing and processing of farm products, either through the formation of co-operatives or of marketing boards. Aided by government legislation, producer marketing boards have been established for many products with the avowed purpose of stabilizing prices. Direct government aids are also available through price stabilization legislation, crop insurance and farm credit policies. Thus the role of governments and of farmer-controlled companies in the marketing of farm products is expanding year by year. On the other hand, private industry still holds and likely will continue to hold an important place in the processing and marketing field. Geographical shifts in production have required the construction of new plants, especially for livestock slaughter, and in recent years a number of new plants have been built for the processing of fruit and vegetable crops. Progressive trends in agriculture have also had the effect of increasing demand for many industrially produced commodities and services such as machinery, electricity, fertilizers, antibiotics, pesticides and so on, farmer expenditures for which have been increasing at a rapid rate in recent years.

Although improvements in farm practices have certainly resulted in greater agricultural productivity in recent years and will continue to do so, it must not be forgotten that weather is still a dominant factor in agricultural output and can cause considerable variation from year to year in the over-all farming picture or in the output of certain localities or of certain crops. In 1966 the weather was particularly favourable for crop production with the result that the index of field crop output (1949=100) rose to 204.1, the highest level ever reached.

## Section 1.—Federal Government in Relation to Agriculture\*

The Canada Department of Agriculture dates from Confederation. It was established in 1867 as an outgrowth of a Bureau of Agriculture set up in 1852 by an Act of the Legislature of the Province of Canada. The Department derives its authority from the British North America Act, 1867, which states in part that "in each province, the legislature may make laws in relation to agriculture in the province" and that "the Parliament of Canada may from time to time make laws in relation to agriculture in all or any of the provinces; and any law of the legislature of a province relative to agriculture, shall have effect in and for the province as long and as far as it is not repugnant to any Act of the Parliament of Canada".

A Department of Agriculture with a Minister of Agriculture at its head was accordingly established as part of the Government of Canada. Departments of Agriculture headed by provincial Ministers of Agriculture were also set up by the provincial governments, except in the Province of Newfoundland where agricultural affairs are dealt with by the Agricultural Division of the Department of Mines, Agriculture and Resources. The agricultural affairs of the Yukon and Northwest Territories are administered for the Federal Government by the Department of Indian Affairs and Northern Development.

### Subsection 1.—Services of the Canada Department of Agriculture

The activities of the Canada Department of Agriculture (CDA) fall into three broad groups: research, promotional and regulatory services, and assistance programs. Research work is aimed at the solution of practical farm problems through the application of fundamental scientific research to all aspects of soil management and crop and animal production. Promotional and regulatory services are directed toward the prevention or eradication of crop and livestock pests and the registration of chemicals and other materials used to achieve that end and toward the inspection and grading of agricultural products and the establishment of sound policies for crop and livestock improvement. Assistance programs cover some of the sphere of soil and water conservation, price stability, provision of credit, rural rehabilitation and development, and crop insurance and income security in the event of crop failure.

\* Prepared (July 1966) under the direction of S. C. Barry, Deputy Minister of Agriculture, Ottawa.

The Department has four main Branches—Research, Health of Animals, Economics, and Production and Marketing—and its organization includes a number of smaller units—the Agricultural Stabilization Board (see p. 457), the Agricultural Products Board, the Prairie Farm Rehabilitation Administration (p. 445), Crop Insurance (p. 458), the Information Division and Departmental Administration. Agencies closely allied with the Department and responsible to the Minister of Agriculture are the Farm Credit Corporation (p. 460) and the Board of Grain Commissioners (see Part II of Chapter XXI).

**Research Branch.**—The research activities of the Department are undertaken mainly by the Research Branch at some 60 centres across the country, although important contributions are also made by the Economics Branch (p. 452), the Health of Animals Branch (p. 451) and the Grain Research Laboratory operated by the Board of Grain Commissioners for Canada (p. 451). About 1,000 research workers are employed by the Department and their specialties run the gamut of scientific agriculture from genetics to engineering. Most of the research is directed from Research Branch executive headquarters at the Central Experimental Farm in Ottawa. Also located there are the statistical, engineering and analytical chemistry research services, together with six of the eight institutes for research on animals, food, entomology, microbiology, plants, soils, biological control and pesticides. Throughout the ten provinces there are 13 research stations, 27 experimental farms, a laboratory and a number of substations.

Originally, the main task of the experimental farms was to determine the potential of the various combinations of soil and climate for producing crops and maintaining livestock, and to develop and test varieties, breeds and management practices suitable for each area. Today's federal research program continues with this early work but is designed to meet the specific needs of domestic and export markets. The accent is on promoting greater efficiency in production and diversification of cropping practices.

Canada's main crop for generations has been wheat, the efficient production of which stems directly from the help the grain growers have received from research. Without the new varieties produced by plant breeding, it would be unprofitable to grow wheat on large areas of the wheat belt. Comparable improvements in oats and barley have enabled the farmer to continue to grow these valuable cereals despite the incidence of pests and diseases, drought and short growing seasons. Research has also augmented livestock returns to farm incomes by developing better grasses and legumes adapted to the various regions of Canada that differ in climatic and soil conditions. Research in other crops, notably oil seed plants and potatoes, has resulted in new varieties with resistance to diseases, with improved quality and suitability for specific processing, and adapted to the different growing areas. More than 80 new varieties of crops have been developed and put into commercial production in the past five or six years. It may be added that research into the storage and processing of crops has been recently accelerated and has led to valuable innovations in the fruit and vegetable industries and in the protection of stored grain.

In livestock, the main lines of progress are through genetics and nutrition and the main subjects are dairy and beef cattle, pigs, poultry and sheep. The advantages of selective breeding have been evidenced through the records of animals tested for many years (see pp. 453-457). The CDA developed a new breed of hog, the Lacombe, which is proving a worthy addition to the old-time breeds. Romnelet, a range-type sheep, was also an outcome of federal breeding programs. Crosses of several meat-type strains of chickens made at federal institutions have led to performance superior to that of pure strains. Extensive studies on the causes and control of diseases and parasites of livestock, fur bearing animals and wildlife are carried on with the result that epidemic outbreaks rarely occur and when they do are quickly suppressed. Live animals and meats must attain the high standards required in the export trade.

A matter of constant concern is the protection of crops from diseases and pests. Chemicals have proved to be potent weapons but there is also a continuing search for other control methods. Many weeds can be eradicated by proper tillage and cropping methods



and a few have been controlled by insects that feed on them exclusively and destroy them. Fungus diseases may be checked by developing resistant varieties of crops. In biological control, parasites or predators are produced and released to prey on certain insects and eliminate them. Sterilization of male insects by radiation or chemical means is another method used to reduce insects of various kinds.

An area of special interest is that of farm mechanization in which there has been tremendous development in the past 60 years. The Research Branch is expanding its studies in this field at the Engineering Research Service in Ottawa and in the Maritime Provinces, and universities are being encouraged to study the subject more intensively.

Soil surveys are conducted in all provinces in co-operation with provincial departments of agriculture and the universities. Soils are examined and classified as to their chemical and physical characteristics and potential productivity. The resulting information is of inestimable value in setting up land uses under the ARDA program administered by the Department of Forestry and Rural Development (see pp. 445-446). Soil fertility is under study at all experimental farms and at many research stations and is undertaken in close co-operation with the universities. Agrometeorology, a relatively new discipline, is opening new opportunities to growers to make the most use of the heat, light and moisture available in each farm area.

Although most agricultural research is carried out by the CDA, important programs are also undertaken by the provincial governments and agricultural colleges. Close liaison exists between these different agencies to avoid duplication and to ensure that the services offered by the Federal Government through provincial extension officers is of the kind needed by farmers. Federal research establishments across the country are represented on provincial committees concerned with field crop varieties, fertilizer practices, soil fertility, spray programs, field crop and animal management, and horticulture. Such collaboration ensures that new practices discovered by research are brought quickly to the attention of extension groups to recommend for local use.

**The Grain Research Laboratory.**—This Laboratory provides scientific services required in the administration of the Canada Grain Act. It carries out annual studies of the quality of the new crop cereals, maintains a continuous check of the quality of cereal grains as they move forward from the farm to marketing positions and plays a major role in testing (prior to licensing) the quality of plant breeders' varieties of various cereals. A comprehensive program of basic and applied research relating to the quality of Canadian cereal grains is an important task of the Laboratory.

**Health of Animals Branch.**—This Branch administers the Animal Contagious Diseases Act, the Meat Inspection Act and the Humane Slaughter of Food Animals Act, and operates laboratories for the study of animal diseases. Contagious diseases of animals are controlled through preventive measures of inspection and quarantine of imported livestock and restricted commodities such as meat, farm products and other possible sources of infection; through conducting disease eradication programs, notably of bovine tuberculosis, brucellosis and Johne's disease; through the control and eradication of serious animal diseases when outbreaks occur; and through inspection and certification as to health of livestock for export. The Animal Pathology Division consists of the Animal Diseases Research Institute at Hull, Que., the Animal Diseases Research Institute (Western) at Lethbridge, Alta., and seven branch laboratories; these establishments conduct research and investigations on infectious diseases of animals and produce the biological products required in their control. The Division also provides diagnostic services for diseases of domestic and wild animals and conducts a training program for departmental officers and veterinarians from other lands. The Meat Inspection Division conducts ante-mortem and continuous post-mortem examination of animals slaughtered at packing plants that market their meat products outside of the province in which they operate, ensures maintenance of sanitary standards during processing of the products, accurate labelling and proper kind and use of ingredients and preservatives; it ensures also that, in these plants, the animals are slaughtered in a humane manner.

**Economics Branch.**—This Branch collects, analyses and interprets economic information needed to formulate and administer departmental programs and policies and does intelligence and research work designed to increase efficiency in agricultural production and marketing and to guide farmers in making needed adjustments in farm organization and operation. It acts as an economic and statistical research agency for the Agricultural Stabilization Board, the Prairie Farm Rehabilitation Administration and other bodies, and assists in any economic undertakings with which the Department is concerned. The Branch is also closely associated with the work of the Food and Agriculture Organization of the United Nations, the UN/FAO World Food Program, the General Agreement on Tariffs and Trade, and the Directorate of Agriculture of the Organization for Economic Co-operation and Development.

**Production and Marketing Branch.**—The Production and Marketing Branch conducts many of the promotional and regulatory functions of the Department. Six specialized divisions administer legislation and policies in the production and marketing of livestock, poultry, fruits and vegetables, dairy products and plant products, and policies in connection with the control of disease in plants. A General Service Division supplements and complements the specialized divisions in matters of common concern.

The *Livestock Division* (see also pp. 453-457) administers legislation dealing with the grading of meat, wool and fur, with the registration of livestock pedigrees, with performance testing of cattle and hogs and with the supervision of racetrack betting. Other activities include the promotion of livestock improvement and the compilation of market statistics. The *Poultry Division* carries out the policies of the national poultry breeding program, including Record of Performance for poultry and hatchery inspection, and administers the regulations for the grading of poultry products. The *Fruit and Vegetable Division* administers legislation having to do with the grading of fruits and vegetables in both fresh and processed form, maple products and honey. The Division is responsible for the licensing of interprovincial and international dealers and brokers who deal in fresh fruits and vegetables. The *Dairy Products Division* administers the Cheese Factory Improvement Act and legislation covering grades and standards for dairy products, including butter, cheese, concentrated milk products and ice cream. The *Plant Products Division* administers Acts and regulations respecting seeds, feedstuffs, fertilizers and pest-control products, conducts field inspections and maintains regional testing laboratories. The *Plant Protection Division* is responsible, under the Destructive Insect and Pest Act, for safeguarding against the introduction of serious plant insects or diseases into Canada or their spread in Canada, for certifying freedom from disease and pests in plant exports, and for seed potato certification.

The *General Service Division* maintains inspectors in the principal marketing areas to make spot checks on retail outlets to see that food products meet prescribed standards of quality and grade; maintains cargo inspectors at the main Canadian ports to check the handling of goods moving to export markets; administers the payment of subsidies for the construction of public cold storage facilities; compiles and distributes market information; and co-operates with the commodity divisions in developing markets for Canadian foods and in interpreting the grading and inspection regulations to the public.

**Information Division and Departmental Administration.**—The Information Division gathers and publishes information arising from research work and the development of regulatory programs of the Department. Publication is through the printed word, press and radio releases, motion pictures, television and exhibits. The general business management of the Department is undertaken by the Departmental Administration, the duties of which also embrace Emergency Measures Planning and the Departmental Library; the main emphasis of the Library's collection is, of course, on agriculture but extends also to the life sciences.

## FEDERAL ASSISTANCE IN LIVESTOCK IMPROVEMENT

The Canada Department of Agriculture (CDA) has always assisted the livestock industry in its attempts to reach a high level of efficient production with top-quality animals. Programs designed and carried out with this aim concern mainly the food animals—beef and dairy cattle, swine and sheep.

Canada has a large population of purebred cattle, swine and sheep. The general object of any improvement program is to identify bloodlines that will be most suitable to up-grade the commercial herds. In the case of meat animals, this means identifying the kind of breeding stock that will produce market animals with the minimum output of time and feed; in the case of dairy cows, yield of milk is, of course, the criterion; and in sheep, the products are spring lamb and wool. To these ends the industry relies mainly on the Livestock Pedigree Act, Record of Performance (ROP), grading of carcasses and competition through agricultural fairs, in all of which the Federal Government is deeply involved.

### Livestock Pedigree Act

The Livestock Pedigree Act (RSC 1952, c. 168) provides for CDA supervision of the affairs of the breed associations registering livestock in Canada. The conditions of registration are carried out by the independently operated breed associations with the Government verifying the certificates containing the pertinent data of ancestry and ownership. A registration certificate in Canada, therefore, has the status of a legal document.

The Canadian National Live Stock Records (CNLSR) is not a government office. It is a non-profit, record-processing organization, carrying out the instructions of the affiliated breed associations on all matters pertaining to registration of purebred livestock. The Department of Agriculture must approve amendments to the constitutions and by-laws of the national breed associations, and registration certificates issued by the CNLSR. There are 31 affiliated breed associations in the CNLSR and four associations incorporated under the Act which carry on their own recording activities. In 1965, membership in the 38 associations (three administered by the Record Board) was 42,178; registrations numbered 279,910 and transfers 207,867.

The registration of purebred livestock in Canada is an industry in its own right. The recognition given to Canadian livestock pedigrees throughout the world is a tribute to the success of the co-operative effort of Government and breed associations in providing authenticated pedigree certificates.

### Record of Performance Programs

**Dairy Cattle.**—ROP programs for dairy cattle were initiated in 1905 and have kept abreast of changes in dairy production techniques to provide the services and leadership required in the industry. ROP is now an integral part of dairy cattle production and has enhanced the stature of Canadian breeding stock in world trade. ROP records are the only dairy testing records officially recognized by the breed associations, and constitute the production requirements for registration of male calves in three of the four major dairy breeds.

Some 4,000 breeders are enrolled in the program and test in the neighbourhood of 110,000 cows each year. Although this is only  $3\frac{1}{2}$  p.c. of Canada's total dairy cow population, it constitutes basic seed stock testing adequate to provide the nucleus for the national purebred dairy herd, which in turn is the nucleus on which the commercial dairy cattle population is built. Because artificial insemination of cows is widely practised in Canada, breeding to ROP-tested stock is available to all farmers. At present, 60 p.c. of all dairy calves registered were sired by purebred bulls at Artificial Insemination (AI) stations. Dairy bull semen was used to inseminate 607,000 cows in 1964 and it was estimated that approximately 20 p.c. of the national cow population was AI-bred in 1965.



The AI stud is a seed reservoir which has a vital bearing on the growth in quality of the commercial herds because it contains proven bloodlines of many breeds. For this reason dairy sire appraisals, instituted as an adjunct to ROP and sire reports, have become an essential part of dairy ROP. Sire appraisal is based on contemporary comparisons and a bull is rated only when he has a minimum of 20 effective daughters to his credit. These reports on sires are of considerable significance to both the AI industry and to the breed associations. They rate bulls of each breed on the average performance of their daughters compared with the performance of contemporary cows in the same herd but from other sires. The identification of plus-producing and minus-producing sires from these ratings permits identification of the superior and inferior sires.

**Beef Cattle.**—Although the ROP program for beef cattle has been in effect for only ten years, it has already proved to be a sound means of identifying the performance traits of greatest economic importance to the beef industry. Beef cattle testing is carried out as a joint federal-provincial program with the guidance and co-ordination of the Livestock Division of the Department of Agriculture's Production and Marketing Branch. Performance testing seeks to measure the ability of breeding stock to perform in all traits of basic economic importance; in the case of beef cattle this includes reproduction efficiency, longevity, gainability, feed efficiency and carcass value.

Testing is carried out at three levels: the federal-provincial ROP herd test program; the station testing of individual bulls and sire progeny groups of bulls; and the beef sire progeny testing through the performance test and carcass appraisal of steers. The second and third levels come under the recently established Canadian Beef Cattle Test Station policy.

The basic objective of the *herd test program* is to identify those sires and dams that have a high rate of reproductive efficiency, and progeny that demonstrate above-average ability to make rapid and economic gains. In this manner, future herd sires and replacement females are positively identified as well as the dams and sires that should be removed from the herd. In the 1965-66 test year, approximately 10,500 calves were tested in 330 herds representing all but two provinces, the number being approximately 11 p.c. of all beef calves registered in 1965; this record may be compared with that of 1956 when a total of 341 calves from 15 herds in three provinces were tested. The federal Livestock Division co-ordinates the program and compiles and issues the results. The provincial governments provide the extension and supervision required to operate the program within each province. Ontario operates its own provincial herd testing program.

The second year of *beef bull station testing* under the ROP policy was completed in 1966 with 700 bulls passing through stations in Alberta, Saskatchewan and Manitoba. Ontario operates its own testing program but the federal Livestock Division co-ordinates and reports the operations of all stations for the information and use of the industry. This form of testing supplements and complements the ROP test carried on within breeders' herds and gives a contemporary comparison of individual bulls or sire progeny groups of at least five bulls tested under uniform conditions.

*Beef sire progeny testing* through performance and carcass appraisal requires ten steer progeny and is designed for use by breeders participating in the ROP herd test. The test has been mainly used in the appraisal of sires for AI batteries. Since 1959 over 100 sires in AI studs have been tested through this program. Such testing represents the ultimate currently available in the assessment of beef cattle performance traits. It is by far the most expensive form of testing and therefore needs to reflect the activities carried out in the less expensive procedures of herd testing and station testing of bulls. A great deal can still be done through the progeny test to appraise the value of sires in breeders' herds in comparison with those in use at the AI centres. Beef sire progeny testing is at present carried out only in British Columbia and Alberta.

The progressive livestock farmer who applies these proved testing procedures assures himself of a larger income and the nation of a higher beef and milk productivity.

**Swine.**—The ROP program for swine began in 1928 as "The Advanced Registry for Swine" in line with the hog-grading activities initiated in 1922. Over the years, the swine-testing program was modified to retain a practical approach to the situation as it changed within the industry. In 1957 the Advanced Registry Board, under which it operated, was dissolved and the Department of Agriculture took on the function of operating the policy as ROP for swine. At the same time home testing (testing at the premises of the breeder) was reinstituted in an endeavour to accelerate testing activity. As a result, swine testing increased annually and in 1965 a 5-p.c. increase over the previous year was registered when 355 breeders tested 1,519 groups of four pigs, as required in the ROP test.

The most recent significant change was a revision applicable to pigs born after Jan. 1, 1965 which altered both the measurements used to assess the carcass and the terms in which carcass merit was reported. The new carcass appraisal included, for the first time, assessment of the ham muscling and excluded, for the first time, assessment of the belly bacon. Reports issued on groups tested prior to 1965 were made in terms of a score calculated from specific measurements taken on the carcass. The new method entails a prediction of the lean content of the four major wholesale cuts from the hog as a means of estimating the salable content of trimmed carcass. Pre-1965 test results were based on maximum scores being provided for intermediate rather than maximum measurements. As a result, optimum carcass scores were given for intermediate measurements since no credit was provided for measurements in excess of that receiving the maximum point score. Under the new system, full credit is given for the actual measurements taken which are included in the calculation of percentage yield of trimmed cuts, thus permitting the assessment of swine carcasses relative to their merit in the meat trade.

A new system of reporting tests has been developed to provide current results to breeders more promptly. Weekly reports go forward to all ROP breeders giving test results across the country. An abbreviated report on the top-performing 15-20 p.c. of the matings tested each week is provided to the industry through the *Livestock and Meat Trade Report* and press channels; it includes an index combining the assessment for yield of trimmed cuts and the maturity of the test group.

The ROP program for swine has been adopted as the basis for the establishment of Elite Herd Policies within the provinces. This development has been fostered by the Canadian Federation of Agriculture through swine conferences held in 1964 and 1965, and represents a tangible use of ROP for swine improvement on a herd basis.

**Investigation and Study of New Developments.**—In the field of dairy cattle production, activity in recent years has been directed to the development of a practical field system of testing for solids-not-fat in milk. The Livestock Division maintained a joint operation with the Ontario Agricultural College to assess the feasibility of routinely testing milk for all constituents. Various methods were tried over a five-year period, one of which—an automated method adaptable to electronic data processing (infra-red milk analysis)—was found to be highly successful, although detailed results are not yet available.

The sire appraisal work for dairy bulls in AI centres began as a pilot project but now constitutes a major part of ROP. Beef bull progeny testing also began as a pilot project, as did the station testing of beef bulls. Now both these facets of beef testing are specific functions within the ROP operation. A pilot project to assess the validity of testing sires through veal calves is under way. A pilot project to determine the feasibility of operating a bull test station in the Maritime Provinces is also being investigated.

In swine production, investigations have been made into the merit of specified cross-breeding practices on a large scale. In trials, three-way crossbred pigs were found to produce 26 p.c. more pounds of carcass at 180 days of age than did purebreds. The 26 p.c. was the combined difference in pounds due to larger litters, better livability, and faster growth. In addition, the percentage of Grade A pigs was higher among the crossbreds

than among purebreds. A pilot project of "back fat probing" as a supplementary means of assessing hog quality is under development. These projects are carried on in two ways—either on initiation of the Livestock Division or in co-operation with provincial committees dealing with a particular phase of livestock production.

Investigations have been carried on in co-operation with the Demonstration Farm Service of the Ontario Department of Agriculture with respect to the feasibility of establishing an ROP program for sheep. At present the major activity in the field of sheep promotion and improvement is the financial assistance provided in the movement of commercial ewes and ewe lambs to areas where there is a lack of sheep for breeding purposes. Lamb and wool production in Canada have declined steadily but CDA continues its efforts to promote development of the industry. Canada would need 9,000,000 sheep to eliminate wool imports but the national flock in 1966 numbered just over 1,000,000.

### **Livestock Grading**

Hog grading came into effect in Canada in 1922, beef carcass grading in 1929 and carcass grade standards for lamb and veal carcasses in subsequent years. In 1958, after consultation with the industry, regulations covering grades for beef and veal, hogs, lamb and mutton were written into the Canada Agricultural Products Standards Act. The new standards were more specific and permitted greater uniformity of application. To maintain this uniformity, Livestock Division staff constantly check grades at the national, regional and local levels in 79 inspected and 77 approved packing plants operating throughout the country.

The Federal Government began paying hog quality premiums in 1944—\$2 for a Grade A and \$1 for a Grade B carcass. In 1963, the premium to producers was changed to \$3 for Grade A and the premium for Grade B was removed. The lamb premium policy was begun in 1961 with \$2 for Choice and \$1 for Good carcasses weighing 36-51 lb. Since 1962, premiums have also been paid for Choice and Good carcasses of 52-56 lb. warm dressed weight.

Grading classifies units of a commodity into groups according to established and generally accepted criteria, thereby providing an efficient basis for the pricing and marketing of carcasses of different quality levels. Grading is utilized by the producer as a basis of sale, by the packer as a guide in buying and selling, and by the retailer in providing for his customers a uniform supply of the type and quality of meats desired. At the retail level grading is concerned with quality, condition and packaging. Grading provides the necessary vehicle by which consumer preferences are transmitted back to the producer, it facilitates trading between buyers and sellers and it provides a standard by which consumers are assisted in selecting the quality most desired. Because better grades bring better prices, grading is both a guide and an incentive in the improvement of livestock.

### **Fairs and Exhibitions**

The Federal Government has been making grants to fairs and exhibitions since 1903. Twelve Dominion exhibitions held between 1902 and 1914 received grants totalling \$658,000 through that period. In 1915 it was decided to help all of the larger fairs and to provide half of the prize money paid out on utility classes of horses, cattle, sheep, swine and poultry. At a Fairs Conference in 1923 "A" and "B" fair classifications were adopted, one to three "A" fairs being allotted to each province. The grant to "A" fairs was \$5,000 and to "B" fairs, \$1,500. Grants for junior activities and of judging fees were added in 1936. From 1912 to 1940, there were 101 fairs held in 92 districts of the then nine provinces.

After World War II, the Department made available building agreements and grants covering one third of the cost of construction, the annual grant being limited to \$10,000 and the total to \$100,000. In the past 15 years, the Department has paid \$7,000,000 in major capital grants, which accounted for about 30 p.c. of the total cost of buildings constructed under this assistance. Exhibition Grants Regulations were amended in 1957 to include grants to agricultural museums.



A major move toward using fair competitions to promote livestock improvements was taken in 1964-65. Prize money was offered for specified livestock classifications drawn up by the Department following discussion with exhibition, provincial government and breed association officials. The plan was to place more emphasis on utility in purebred livestock fair competitions, to reduce the exhibitions' cost of showing, to encourage more breeders to exhibit, and to increase spectator interest. The new classifications sharply reduced the number of classes and exhibitors were generally limited to one entry per class. Utility features introduced included production requirements on dairy cattle entries, proof of productivity such as "cow with calf at foot" in the beef classes, ROP requirements on swine entries, and "ewe with lambs at foot" in the sheep classes. Carcass classes for steers, barrows and lambs carried appraisal through from the live showing at the fair to slaughter and subsequent display of the carcass at the fair. Interbreed classes were held for steers, hogs and sheep and an interbreed "best udder" class was introduced for dairy cows.

Of the 10 winter and spring fairs, 32 class A exhibitions and 100 class B exhibitions held in 1965, 96 adopted the new livestock classifications in whole or in part. It is estimated that 90 p.c. of the listed exhibitions adopted the classifications in whole or in part in 1966.

Grants to fairs, exhibitions and agricultural museums in 1965-66 totalled \$918,340 distributed as follows: permanent improvements, \$211,711; judges' fees, \$36,243; junior activities, \$100,200; special grants, \$123,000; major building grants, \$12,736; and prize money grants to fairs adopting the new livestock classifications, \$433,450.

### Subsection 2.—Farm Assistance Programs

Basic to the concept of Canada's national agricultural policy is the premise that a stable agriculture is in the interests of the national economy and that farmers as a group are entitled to a fair share of the national income. In pursuit of these objectives, the Department of Agriculture has carried on, over a long period, a program designed to aid agriculture through the application of scientific research and the encouragement of improved methods of production and marketing. Over the years, as conditions have warranted, programs have been initiated to deal with special situations such as the Prairie Farm Rehabilitation Act (see p. 445) to deal with the results of the drought in the 1930s; the Prairie Farm Assistance Act (p. 462) to mitigate the effects of crop failure; Feed Grain Assistance Regulations (p. 462) to assist in the movement of western feed grains to Eastern Canada and British Columbia; and the Maritime Marshland Rehabilitation Act (p. 440) to save valuable soil in the Maritime Provinces.

Although much has been accomplished and is still being accomplished by these measures, changes in the past two decades have dictated a new approach to some problems. Large-scale mechanization was the sequel to the reduction of manpower available to farmers; the number of farms declined but the size of farms increased; marketing and income problems took different forms. Legislation enacted to meet these situations include price support (Agricultural Stabilization Act), crop insurance (Crop Insurance Act), resource development (Agricultural and Rural Development Act) and credit facilities (Farm Improvement Loans Act, Prairie Grain Advance Payments Act, Farm Credit Act and Farm Machinery Syndicates Credit Act). These measures, with the exception of the Agricultural and Rural Development Act (see pp. 445-447), are described individually below.

**Agricultural Stabilization Act.**—The Agricultural Stabilization Act (SC 1958, c. 22, proclaimed Mar. 3, 1958) established the Agricultural Stabilization Board and repealed the Agricultural Prices Support Act, 1944. The Board is empowered to stabilize the prices of agricultural products in order to assist the agricultural industry in realizing fair returns for labour and investment, and to maintain a fair relationship between prices received by farmers and the costs of goods and services that they buy.

The Act provides that, for each production year, the Board must support, at not less than 80 p.c. of the previous ten-year average market or base price, the prices of nine commodities (cattle, hogs and sheep; butter, cheese and eggs; and wheat, oats and barley produced outside the prairie areas as defined in the Canadian Wheat Board Act). Other commodities may be supported at such percentage of the base price as may be approved by the Governor in Council. Since the Act came into force, the following farm products, other than the nine named commodities, have been supported at one time or another: honey, potatoes, soybeans, sunflower seeds, sugar beets, tobacco, turkeys, apples, peaches, sour cherries, apricots, raspberries, asparagus, tomatoes, milk for manufacturing and skim milk powder. The Board may stabilize the price of any product by an offer-to-purchase, by a deficiency payment, or by making such payment for the benefit of producers as may be authorized.

In stabilizing prices of certain commodities by means of deficiency payments, the price stabilization program has been assisting the agricultural industry to make production adjustments from a position of excessive supply to one of more normal relationship between supply and demand. The institution of limited deficiency payments by the Board assists in the adjustment of production in a relatively short time. During the period of adjustment, the Board guarantees a minimum average return to producers for a limited quantity of product.

During the seven fiscal years that the Act was in operation prior to Mar. 31, 1965, the cost of stabilization programs averaged \$57,000,000 a year and was little changed in the following fiscal year. The Board has available a revolving fund of \$250,000,000. Losses incurred are made up by Parliamentary appropriations and any surplus is paid back to the Consolidated Revenue Fund. An Advisory Committee named by the Minister of Agriculture and composed of farmers or representatives of farm organizations assists the Board in its operations.

**Crop Insurance Act.**—To assist in making the benefits of insurance protection on crops available in all provinces, the Crop Insurance Act was passed in 1959. This Act does not set up any specific insurance scheme but rather permits the Federal Government to assist the provinces to do so by making direct contributions toward the cost of providing crop insurance. The initiative for establishing schemes to meet their own regional requirements rests with the provinces. Schemes may be organized on the basis of specific crops or areas within the provinces and agreements between the provinces and the Federal Government set out the terms of insurance coverage. By Sept. 12, 1966, crop insurance legislation had been passed by all provinces except Newfoundland and Quebec, and the latter province was preparing similar legislation.

Under the Act and amendments of 1964 and 1966, the Federal Government will pay 50 p.c. of the administrative costs incurred by a province and 25 p.c. of the amount of premiums required to make the scheme actuarially sound. In addition, the Federal Government may make loans to any province equal to 75 p.c. of the amount by which indemnities required to be paid under policies of insurance exceed the aggregate of the premium receipts for that year, the reserve for the payment of indemnities, and \$200,000. As an alternative to such loans, the Federal Government may re-insure a major portion of the provincial risk in a program taken out under the Crop Insurance Act. Farmers insured under the Act are not eligible for payments under the Prairie Farm Assistance Act, nor are they required to pay the 1-p.c. levy on grain sales as provided for under that Act.

In 1965, 13,500 farmers received coverage under the Act for a total of \$26,000,000.

**Farm Improvement Loans Act.**—The Farm Improvement Loans Act (RSC 1952, c. 110), administered by the Department of Finance, is designed to provide credit by way of loans made by the chartered banks to assist in almost every conceivable purchase or project for the improvement or development of a farm and includes the purchase of agricultural implements, the purchase of livestock, the purchase and installation of agricultural equipment or a farm electrical system, the erection or construction of fencing or works for

drainage on a farm, and the construction, repair or alteration of farm buildings including the family dwelling. Credit is provided on security related to the purchase or project and on terms suited to the individual borrower.

The legislation, originally operative for three years (1945-48), has been continuous by way of extensions usually for three-year periods. The latest extension was for the period July 1, 1965 to June 30, 1968. The maximum term of a loan and the interest rate remain at ten years and 5 p.c. simple interest, respectively. The borrower is required to provide from 10 p.c. to 33½ p.c. of the cost of his purchase or project, depending on the loan category to which it belongs. The Federal Government guarantees each bank against loss sustained by it up to an amount equal to 10 p.c. of loans granted by it in a lending period. This guarantee does not apply to any loan made after the aggregate of all loans made by all banks in a given period reaches an amount fixed by statute. The current maximum stands at \$700,000,000. By Dec. 31, 1965, 2,905 claims amounting to \$2,094,404 had been paid under the guarantee since the inception of the Act, representing a net loss ratio of less than one tenth of one per cent after recoveries have been taken into account. The maximum loan or amount which may be outstanding to a borrower at any one time stands at \$15,000.

By the end of 1965, \$1,388,582,471 or 80.3 p.c. of the total loans made had been repaid. The position at that time was as follows:—

Period	Loans Made	Repayments <sup>1</sup>	Balance Outstanding
	\$	\$	\$
Mar. 1, 1945 to Feb. 28, 1948.....	33,605,576	33,605,576	—
Mar. 1, 1948 to Feb. 28, 1951.....	142,372,774	142,367,521	5,253
Mar. 1, 1951 to Mar. 31, 1953.....	190,449,006	190,419,889	29,117
Apr. 1, 1953 to Mar. 31, 1955.....	222,723,494	222,602,227	121,267
Apr. 1, 1955 to Mar. 31, 1959.....	239,064,072	238,337,976	726,096
Apr. 1, 1959 to June 30, 1962.....	346,911,319	334,592,293	12,319,026
July 1, 1962 to June 30, 1965.....	447,766,288	223,200,017	224,566,271
July 1, 1965 to Dec. 31, 1965.....	106,624,012	3,456,972	103,167,040
<b>TOTALS.....</b>	<b>1,729,516,541</b>	<b>1,388,582,471</b>	<b>340,934,070</b>

<sup>1</sup> Includes principal amount of claims paid under government guarantee.

### 1.—Loans Made under the Farm Improvement Loans Act, by Purpose and Province, 1964 and 1965, with Cumulative Totals from 1945

Purpose and Province	1964		1965		Cumulative Totals 1945-65	
	Loans	Amount	Loans	Amount	Loans	Amount
	No.	\$	No.	\$	No.	\$
<b>Purpose</b>						
Purchase of agricultural implements...	58,302	109,899,350	69,428	152,412,830	1,017,107	1,392,256,395
Construction, repair or alterations of, or making additions to any building or structure on a farm.....	8,508	21,075,207	9,431	29,957,670	92,169	175,580,749
Purchase of livestock.....	9,005	14,278,399	7,876	13,871,160	96,593	117,328,244
Other improvements.....	4,817	5,583,373	4,456	6,465,250	49,422	44,351,153
<b>Totals.....</b>	<b>80,632</b>	<b>150,836,329</b>	<b>91,191</b>	<b>202,706,910</b>	<b>1,255,291</b>	<b>1,729,516,541</b>
<b>Province</b>						
Newfoundland.....	28	63,176	22	47,459	606	915,758
Prince Edward Island.....	1,023	1,467,714	1,170	2,062,835	18,329	20,573,486
Nova Scotia.....	662	1,011,684	621	1,127,556	12,872	14,590,103
New Brunswick.....	531	1,000,712	606	1,539,136	10,946	14,530,001
Quebec.....	2,725	5,839,964	2,049	4,861,966	112,542	152,495,990
Ontario.....	15,260	29,149,925	16,795	38,324,172	207,550	303,269,830
Manitoba.....	10,962	19,982,904	11,750	25,533,307	152,418	203,102,781
Saskatchewan.....	24,069	45,165,138	28,891	64,149,297	359,792	498,019,597
Alberta.....	23,012	42,187,529	26,799	58,634,662	344,124	468,643,797
British Columbia.....	2,360	4,967,583	2,488	6,406,520	36,112	53,375,198



**Prairie Grain Advance Payments Act.**—This Act, which came into force on Nov. 25, 1957, provides for an interest-free advance payment to producers for threshed grain (wheat, oats, and barley) in storage other than in an elevator and prior to delivery to the Canadian Wheat Board, exclusive of grain deliverable under a unit quota. Advance payments of 50 cents per bu. of wheat, 20 cents per bu. of oats and 35 cents per bu. of barley are made, subject to certain restrictions as to quota and acreage. Maximum advance payment per application is \$3,000. Repayment is effected by deducting 50 p.c. of the initial payment for all grain delivered subsequent to the loan, other than for grain delivered under a unit quota. The amounts deducted are paid to the Board until the producer has discharged his advance. At July 31, 1966, the position with respect to advances and refunds was as follows:—

<i>Period</i>	<i>Applications</i>	<i>Total Advance</i>	<i>Average Advance</i>	<i>Total Refunded</i>	<i>Percentage Refunded</i>
	<i>No.</i>	<i>\$</i>	<i>\$</i>	<i>\$</i>	
Aug. 1, 1957—July 31, 1958.....	50,412	35,203,467	698	35,199,716	99.9
Aug. 1, 1958—July 31, 1959.....	45,341	34,369,653	758	34,364,511	99.9
Aug. 1, 1959—July 31, 1960.....	50,047	38,492,505	769	38,486,290	99.9
Aug. 1, 1960—July 31, 1961.....	76,089	63,912,550	840	63,899,404	99.9
Aug. 1, 1961—July 31, 1962.....	22,342	16,656,713	746	16,642,231	99.9
Aug. 1, 1962—July 31, 1963.....	39,683	29,251,526	737	29,231,673	99.9
Aug. 1, 1963—July 31, 1964.....	63,427	62,136,418	980	62,063,529	99.9
Aug. 1, 1964—July 31, 1965.....	38,375	32,961,844	859	32,812,037	99.5
Aug. 1, 1965—July 31, 1966.....	43,509	40,600,386	933	38,813,703	95.5

**Farm Credit Act.**—The Farm Credit Act (SC 1959, c. 43, proclaimed on Oct. 5, 1959) established the Farm Credit Corporation as successor to the Canadian Farm Loan Board established in 1929. The Corporation, which is a Crown agency, reports to Parliament through the Minister of Agriculture.

The Act provides two types of long-term mortgage loans for farmers. Under Part II of the Act the Corporation may lend up to 75 p.c. of the appraised value of the farm land and buildings taken as security, or \$40,000, whichever is the lesser. Under Part III the Corporation may lend 75 p.c. of the appraised value of the farm land and buildings and of the livestock and equipment taken as security, or \$55,000, whichever is the lesser. To qualify for a loan under Part III a farmer must be under 45 years of age and have had at least five years of farming experience. Part III loans are further secured by mandatory insurance on the life of the borrower, and his farming operations are subject to supervision by the Corporation until the loan is reduced to 75 p.c. of the appraised value of the farm land and buildings. Similar life insurance and supervision are available on an optional basis to borrowers under Part II.

The interest rate on the first \$20,000 borrowed under Part II or the first \$27,500 under Part III is set by statute at 5 p.c. On that part of the loan which exceeds these amounts the interest rate is set by the Corporation with the approval of the Governor in Council. This rate can vary according to the interest rate on money borrowed by the Corporation, the operating costs of the Corporation and the allowance made for reserves against capital losses. The interest rate on the amount of loan under Part II exceeding \$20,000 and the amount under Part III exceeding \$27,500 is, at present, 6½ p.c. All loans are repayable on an amortized basis within a period not exceeding 30 years.

The Corporation has 127 field offices administered by 195 credit advisers who are responsible for informing local farmers about the services available, for pre-loan counselling on credit use, farm planning and farm management, for accepting applications and for making farm appraisals.

In addition to the amounts repaid by borrowers, funds for lending to farmers may be borrowed by the Corporation from the Minister of Finance. The aggregate amount of such borrowings outstanding at any time may not exceed 25 times the capital of the Corporation. This capital was raised by amendment to the Act in 1966 from \$24,000,000 to \$40,000,000. There were 52,932 loans to the amount of \$586,356,486 outstanding as of Mar. 31, 1966.

## 2.—Loans Approved and Disbursed under the Canadian Farm Loan Act and the Farm Credit Act, Years Ended Mar. 31, 1957-66

NOTE.—Figures for earlier years are given in the corresponding table of previous Year Books beginning with the 1940 edition.

Year Ended Mar. 31—	Loans Approved		Loans Paid Out	Year Ended Mar. 31—	Loans Approved		Loans Paid Out
	No.	\$	\$		No.	\$	\$
1957.....	2,921	13,978,700	13,183,992	1962.....	5,885	68,574,850	68,886,875
1958.....	3,702	21,278,450	19,343,560	1963.....	7,438	90,924,300	78,423,094
1959.....	4,805	30,144,950	28,368,265	1964.....	8,689	108,009,100	96,315,635
1960.....	5,339	40,031,250	35,840,882	1965.....	10,142	154,813,900	139,750,639
1961.....	5,597	60,704,050	52,305,265	1966.....	11,238	208,984,900	201,687,642

<sup>1</sup> Repealed by the Farm Credit Act, proclaimed Oct. 5, 1959.

## 3.—Loans Approved under the Farm Credit Act, by Province, Years Ended Mar. 31, 1964-66

NOTE.—Figures for earlier years are given in the corresponding table of previous Year Books beginning with the 1940 edition.

Province	1964		1965		1966	
	No.	\$	No.	\$	No.	\$
Newfoundland.....	5	68,600	3	55,700	2	45,700
Prince Edward Island.....	155	1,245,700	124	991,700	100	1,134,900
Nova Scotia.....	74	821,800	77	964,100	58	1,008,800
New Brunswick.....	83	945,200	72	821,300	81	1,304,400
Quebec.....	1,221	14,710,400	1,354	20,326,500	1,140	18,987,200
Ontario.....	1,796	24,766,000	2,131	34,461,200	2,210	42,695,300
Manitoba.....	625	7,460,800	691	9,176,200	899	14,879,500
Saskatchewan.....	2,332	25,200,900	2,601	35,570,100	3,197	56,570,200
Alberta.....	2,043	27,157,600	2,602	42,512,300	2,940	58,346,300
British Columbia.....	355	5,632,100	487	9,934,800	611	14,014,600
<b>Totals.....</b>	<b>8,689</b>	<b>108,009,100</b>	<b>10,142</b>	<b>154,813,900</b>	<b>11,238</b>	<b>208,984,900</b>

**Farm Machinery Syndicates Credit Act.**—The Farm Machinery Syndicates Credit Act (SC 1964-65, c. 29, proclaimed Dec. 11, 1964) provides the Farm Credit Corporation with authority to make loans to qualified groups of farmers (referred to as syndicates) to purchase farm machinery to be used co-operatively and primarily on the syndicate members' farms. Under this Act, the Corporation may lend a syndicate up to 80 p.c. of the cost of the machinery to be purchased but loans outstanding to any syndicate may not exceed \$15,000 per member or \$100,000. Funds for this purpose are advanced to the Corporation by the Minister of Finance.

To qualify for a loan a syndicate must have three or more members, all of whom are farming and the majority of whom have farming as their principal occupation. Loans are repayable over a term not exceeding seven years. Security is provided by a promissory note signed by each syndicate member and such other security as may be required.

The interest rate, set by the Corporation with the approval of the Governor in Council, is based on the cost of funds to the Corporation, the expenses in servicing loans and an allowance for a reasonable reserve against losses. The rate was set at 6 p.c. in December 1964. There is an initial service charge of 1 p.c. on the amount of each loan. The Corporation's field staff provide assistance to groups of farmers in making their local arrangements with respect to sharing in the use of the machinery and repayment of the loan. Up to Mar. 31, 1966, the Corporation had approved 136 loans totalling \$988,893.

**Prairie Farm Assistance Act.**—The Prairie Farm Assistance Act, passed in 1939, provides for direct money payments by the Federal Government on an acreage-and-yield basis to farmers in areas of low crop yield in the Prairie Provinces and in the Peace River area of British Columbia. Its purpose is to assist in dealing with a relief problem which the provinces and municipalities cannot do alone and to enable the farmers to put in a crop the following year. Payments for the 1965-66 crop year, as at Mar. 31, 1966, totalled \$4,760,236; payments made under the Act since 1939 amounted to \$357,510,068.

Payments are made from the Prairie Farm Emergency Fund to which farmers contribute 1 p.c. of the value of all sales of wheat, oats, barley, rye, flaxseed and rapeseed. The additional funds required are provided from the federal treasury. The total collected through the 1-p.c. levy in the 1965-66 crop year, as at Mar. 31, 1966, was \$5,824,647; the amount collected since 1939 was \$168,467,081.

Farmers operating land in the spring wheat area, and not covered by a federal-provincial crop insurance scheme, are eligible for awards. Crop failure and natural causes preventing seeding and summer fallowing are taken into account in making awards. These may not exceed \$800 in respect of any one farmer's total cultivated acreage.

**Feed Grain Assistance.**—The activities of the Feed Grain Administration of the Department of Forestry and Rural Development include the administration of a program respecting freight and storage assistance on western Canadian feed grains used for feeding livestock in Eastern Canada and British Columbia. Under the Feed Grain Assistance Regulations of the Appropriations Act, the original policy was initiated in October 1941 to enable eastern Canadian feeders of livestock and poultry to obtain western-grown feed grains at reduced cost so that livestock and poultry production could be maintained at a high level. This program has been amended over the years, particularly in the past two years with the introduction of a storage assistance program on winter supplies in Eastern Canada, the extension of freight assistance to truck movements of grain and feeds in Eastern Canada and the introduction of a zone system of payment. Orders in Council passed in 1965 and 1966 extended the payment of assistance to winter storage vessels at eastern ports, extended winter storage to storage facilities deemed as supplementary to licensed storage, and removed special winter rail assistance rates on shipments to the Maritime Provinces after the introduction of special water-competitive agreed charges by the railways.

During the year ended Mar. 31, 1966, \$19,395,114 was spent on the freight assistance program to move 2,465,972 tons of feed grains and millfeeds into Eastern Canada and British Columbia, and \$1,173,259 was spent on the payment of storage charges on western feed grains in store in elevators and vessels in Eastern Canada. Freight-assisted shipments, by province of destination, during the year ended Mar. 31, 1966 were:—

<i>Destination</i>	<i>Wheat</i>	<i>Oats</i>	<i>Barley</i>	<i>Screenings</i>	<i>Millfeeds</i>	<i>Total</i>	<i>Expenditure</i>
	tons	tons	tons	tons	tons	tons	\$
Newfoundland.....	10,065	5,844	7,343	2,145	5,164	30,562	758,197
Prince Edward Island.....	7,448	3,744	9,295	1,569	10,147	32,203	482,592
Nova Scotia.....	59,597	25,518	30,711	7,255	36,318	159,399	2,075,262
New Brunswick.....	18,544	15,138	14,141	5,292	28,195	81,310	1,156,724
Quebec.....	218,669	319,509	336,545	28,034	266,967	1,173,674 <sup>1</sup>	9,310,598
Ontario.....	129,438	237,626	225,447	52,478	150,756	806,619 <sup>2</sup>	4,129,630
British Columbia.....	70,579	43,301	91,524	4,847	30,953	243,122 <sup>3</sup>	2,115,313
TOTALS, 1965-66.....	514,340	650,680	715,006	101,620	528,500	2,526,859 <sup>4</sup>	20,028,316
TOTALS, 1964-65.....	350,048	570,974	731,713	133,154	519,660	2,307,738 <sup>5</sup>	18,349,293

<sup>1</sup> Includes 3,951 tons of rye destined for Quebec. <sup>2</sup> Includes 10,873 tons of rye destined for Ontario. <sup>3</sup> Includes 1,199 tons of sample feed grain, 96 tons of rye and 623 tons of corn destined for British Columbia.

footnotes <sup>1</sup>, <sup>2</sup> and <sup>3</sup>.

<sup>4</sup> Includes 819 tons of sample feed grain, 978 tons of rye and 392 tons of corn.

<sup>5</sup> See



## Section 2.—Provincial Governments in Relation to Agriculture\*

### Subsection 1.—Agricultural Services

**Newfoundland.**—Government agricultural services in Newfoundland are operated by the Agricultural Division of the Department of Mines, Agriculture and Resources. The Division is in charge of a director who is assisted by a staff of 49 officers. For purposes of administration, the province is divided into nine districts. A fieldman with permanent headquarters is located in each district except Labrador, where the officer is resident for the summer only. Officers in charge of different phases of agricultural development visit each district on assignments from the St. John's office.

Departmental policies in support of the agricultural industry include: a bonus of \$125 an acre on land cleared by privately owned equipment; the distribution of ground limestone at a subsidized rate; the payment of bonuses on purebred sires; and financial assistance to agricultural societies, marketing organizations and exhibition committees. An inspection service is provided for poultry products, vegetables and blueberries, production of the latter being encouraged by the burning of suitable berry areas and the improvement of roads and trails leading to them.

Every encouragement is given to the production of livestock. Poultry and beef production have increased with favourable marketing conditions and with departmental assistance and loans under the Provincial Farm Development Loan Act. The Provincial Veterinarian and his staff supervise the health of animals program and the joint federal-provincial project for the eradication of bovine tuberculosis.

The Agricultural Division co-operates with the Department of Education in furthering the 4-H Club movement in the province and accepts responsibility for all projects pertaining to agriculture.

**Prince Edward Island.**—The activities of the provincial Department of Agriculture are suggested by its staff which includes, in addition to the Minister and Deputy Minister, a dairy superintendent, three check testers, three dairy herd improvement promoters, a director of veterinary services and ten subsidized practising veterinarians, a livestock director, a marketing director, a director of extension, a horticulturist, a soil analysis assistant, a poultry fieldman, an economist, an agronomist, a director of 4-H Clubs, three agricultural representatives, a nursery supervisor, a forester, a farm improvement supervisor, and a director, an assistant director and two extension workers of Women's Institutes.

**Nova Scotia.**—The Department of Agriculture and Marketing endeavours to "help the people to help themselves" through strengthening member interest in such organizations as the Nova Scotia Federation of Agriculture, the Nova Scotia Fruit Growers' Association, various agricultural co-operative organizations, credit unions and producer and marketing organizations.

**New Brunswick.**—Provincial government agricultural policy and programs in New Brunswick are directed by the Department of Agriculture. The Department is headed by the Minister of Agriculture who is assisted by the Deputy Minister and the Directors of the following Branches: extension, livestock and dairy, veterinary, poultry, horticulture, field husbandry, potato and plant protection, agricultural engineering, home economics, credit union and co-operative, agricultural education and rural development.

**Quebec.**—The agricultural policy of Quebec is formed around the premise that the family farm remains the ideal basis of the rural social structure. To serve the interests of agriculture, the provincial government, aided by various co-operative and professional associations, is working toward the improvement of agricultural production and marketing through the provision of farm credit, assistance to the farmer in organizing the collective commercialization of his products, the improvement of education and teaching facilities

\* Information supplied by the agricultural authorities of the various provinces.

for farmers, and the encouragement of agricultural research. In addition, aid is provided in the form of subsidies to the settler and farmer in handicapped rural areas for the construction of buildings, the acquiring of stock, land clearing and development, and the transportation of produce to market. Under the federal-provincial ARDA program, plans are under consideration for the better utilization of farm lands and, generally, the rational development of rural areas.

These services are administered through the Department of Agriculture and Colonization which operates under authority of a Minister, two Deputy Ministers and an Advisory Board, and comprises three Directorates and ten Services, the several divisions and branches of which deal with specific problems. Each Service is headed by a director general.

The *Production and Marketing Service* gives guidance to farmers in the best methods of producing and marketing dairy, animal, horticultural and forestry products and administers the co-operative movement. Co-operative associations for purchasing farm supplies and marketing farm products are particularly prevalent in the Province of Quebec.

The *Research, Education and Information Service* administers the Agricultural Research Council which was founded in 1947 to direct, co-ordinate and stimulate research work in agriculture; the results of such research are published in the annual review *Recherches Agronomiques*. This Service is also concerned with the dissemination of scientific information to farmers and the general public through the press, radio and publications; and with animal hygiene. Veterinary education (the School of Veterinary Medicine at St. Hyacinthe) and agricultural education (Institutes of Agricultural Technology at St. Hyacinthe and Ste. Anne de la Pocatière and fifteen intermediate schools), formerly under the Department of Agriculture and Colonization, are now under the administration of the Department of Education. Information intended to improve family life in general by the cultural enrichment of the farm woman is given through direct teaching, by means of the review *Terre et Foyer*, through local exhibitions and the Provincial Exhibition of Farm Women's Clubs.

The *Rural Planning Service*, through its four sections—economy, planning, development and utilization of land—is mainly concerned with the implementation of joint federal-provincial programs being conducted under the federal Agricultural and Rural Development Act (ARDA). The *Colonization Service* is occupied with the establishment of settlers, concessions of land and clearing of land. The *Farm Planning and Extension Service* is involved in the solving of problems of management and the promotion of agriculture at regional and county levels. Twenty-seven district offices co-ordinate the work of agronomists and specialists. Five-year agricultural contests are held in which the farmers of a parish or county take part, and an annual competition for the Agricultural Order of Merit brings into the limelight the most deserving farmers in each of the five regions into which the province is divided. The work of the *Rural Engineering Service* falls into three categories—colonization roads, mechanized work and drainage work. The *Administration Service* deals with personnel, records and the purchasing and maintenance of materials and tools.

Also under the jurisdiction of the Department are the Farm Credit Bureau, the Quebec Sugar Refining Corporation (St. Hilaire) and the Agricultural Marketing Board.

**Ontario.**—The Ontario Department of Agriculture provides financial assistance and administrative services through its Head Office, 14 Branches and one Demonstration Farm, and through research conducted under the direction of the Ontario Research Institute as well as that under way at the Ontario Agricultural College, the Ontario Veterinary College, Macdonald Institute, Western Ontario Agricultural School, Kemptville Agricultural School and the Horticultural Experiment Station.

The administration of the Department is under the supervision of the Deputy Minister with the assistance of two Assistant Deputy Ministers. The Ontario Agricultural College, the Ontario Veterinary College and Macdonald Institute now form part of the University of Guelph. The Ontario Research Institute is the responsibility of the Director of Research

who, in turn, reports to the Deputy Minister. During 1962 an office was established to develop programs under the federal Agricultural and Rural Development Act.

The Dairy Branch provides an inspection, instruction and supervision service to all dairy factories and promotes the production of clean milk on farms. The Milk Commission, functioning under the authority of the Milk Act, 1965, regulates and supervises the marketing of milk and cream. The Ontario Food Council, which operates as a separate Branch, deals with the problems of marketing and merchandising Ontario's agricultural food products, and is also responsible for the market development program of the Department in an effort to increase markets at home and abroad.

Through a staff of agricultural representatives, one of whom is located in each county and district, the Extension Branch carries on an educational and extension service, and gives leadership to 4-H Club work and to the Ontario Junior Farmers' Association. It also provides assistance to farmers and settlers in northern Ontario in connection with land clearing and breaking and improvement of farms and livestock. The Home Economics Branch gives leadership to organized activities of rural women. The Live Stock Branch promotes livestock improvement policies and gives support to purebred livestock associations. The Veterinary Services Branch administers the Community Sales Act, the Dead Animal Disposal Act, meat and livestock inspection and disease control, and provides diagnostic and extension services.

The Farm Economics, Co-operatives and Statistics Branch carries on research in farm business including cost analysis, marketing and land use; in co-operation with the Dominion Bureau of Statistics it gathers and publishes statistics of agricultural production; assists co-operatives to operate sound businesses under the control of their members and administers the Co-operatives Loans Act. The Agricultural and Horticultural Societies Branch provides assistance to agricultural and horticultural fairs and exhibitions, ploughing matches and other competitions and administers the Community Centres Act. A Demonstration Farm in northern Ontario at New Liskeard demonstrates production methods adaptable to that area, present emphasis being on beef cattle. The Soils and Crops Branch assists in the development of good cultural practices, promotes the use of improved strains of seed, works for the improvement of pastures and administers the Weed Control Act.

The Research Institute co-ordinates all research activities of the province's agricultural schools and colleges in addition to developing a thorough research program in the interests of agriculture and industry associated with agriculture.

**Manitoba.**—The Department of Agriculture and Conservation serves Manitoba through the following branches.

The Extension Service deals with agricultural engineering, entomology and bee-keeping, radio, TV and information, 4-H Clubs and women's work, and has specialists devoting attention to these subjects. Meetings, field days, and short courses are held; 37 agricultural representatives and six assistants are located in 35 offices in the province, each serving from one to five municipalities; and 14 home economists serve designated areas.

The Animal Industry Branch develops and administers policies that encourage the improvement and efficient production of different classes of livestock, including poultry; supervises the grading of cream and inspects dairy manufacturing plants. Several Acts to promote high-quality products for consumer protection are administered in close co-operation with federal departments.

The Soils and Crops Branch encourages the development, production and improvement of cereal, forage, horticulture and special crops and promotes proper land use through soil conservation programs. The Branch develops and administers policies that encourage good field crop husbandry, soil conservation and weed control.

The Economics and Publications Branch deals with agricultural economics, supervises the farm business clubs and publishes and distributes annually approximately 250,000 bulletins, circulars, posters, leaflets, etc. The Publications section publishes agricultural statistics and maintains an agriculture reference library.



The Co-operative Services Branch registers and supervises co-operatives and credit unions and administers the Acts governing them. It also collects and compiles statistics on co-operative activity throughout the province.

The Veterinary Services Branch provides a diagnostic laboratory for animal diseases; administers the brucellosis control program, the Veterinary Services District Act and the Veterinary Science Scholarship Fund Act; works in close co-operation with practising veterinarians and the federal Health of Animals Branch in the control of livestock and poultry diseases.

The Water Control and Conservation Branch administers, through the Water Rights and the Water Power Acts, the water resources of the province and all works in connection with the control and utilization of those resources. The Departmental Act and associated statutes provide for the construction of works to control and use water, and for technical and financial assistance to local governments for the construction, maintenance and operation of such works. The Floodway Division is responsible for co-ordinating all matters respecting design and construction of the Red River Floodway.

**Saskatchewan.**—The Saskatchewan Department of Agriculture is organized in the following branches and services.

The Agricultural Representative Branch has a technical staff of 55, which serves all branches of the Department as well as the other agencies operating within the Co-operative Agricultural Extension Program. Agricultural representatives are active in all federal, provincial and university farm services; they work through Agricultural Conservation and Improvement Committees in each rural municipality and local improvement district to supply the farmer with scientific and practical information and to develop district improvement programs. The Department pays one half the cost of local group development projects. In farm labour matters, co-operation is maintained with the federal Departments of Manpower and Immigration and of Labour.

Animal Industry Branch specialists provide technical information to livestock producers and administer the record of performance program for beef cattle. The Dairy Division of the Branch administers dairy herd improvement programs, assists producers with management and production problems, inspects and licenses dairy manufacturing and frozen-food locker plants, and administers dairy, locker plant and margarine legislation; the Livestock Division encourages the use of suitable animals for breeding purposes by the establishment of purebred sire areas and by assistance in the purchase and distribution of bulls, boars and rams, and registers brands, licenses livestock dealers and agents and promotes programs on insect control, feeding and management; the Poultry Division maintains poultry testing and banding services, licenses produce dealers and buyers, hatcheries and hatchery agents, and otherwise promotes flock improvement; the Veterinary Division assists students in veterinary science under a scholarship plan, administers the Veterinary Service District Act and the calfhood vaccination program, provides a laboratory service for the livestock and poultry industries and co-operates with Federal Government officials and local veterinarians in disease prevention and control.

The Conservation and Development Branch provides engineering services for irrigation development, usually in co-operation with the Federal Government, and for drainage programs and water utilization and control projects. Land reclamation and development and the construction of provincial community pastures also come within its jurisdiction.

The Lands Branch administers Crown land, except forest reserves and parks in settled areas; classifies it according to the use for which it is best suited; disposes of such land under long-term leases; secures land control for land utilization projects; supervises new settlement projects; pays for clearing and breaking by farmers on provincial leases; and operates provincial community pastures.

The Plant Industry Branch conducts grassland improvement programs and programs for crop improvement and protection, and gives advice on soil conservation, horticultural problems, and weed and pest control. The Apiary Division advises on beekeeping and honey production and conducts continuous inspection.

Farmers are assisted by the Family Farm Improvement Branch which gives technical advice at the farm on the construction of farm buildings and on farmstead planning, mechanization and materials handling. The Branch conducts research for farm water and sewage works.

The Economics and Statistics Branch undertakes research and investigations required to formulate and evaluate policies and programs that will ensure a high level of growth and efficiency in Saskatchewan's agriculture; it collects, analyses and distributes economic information and principles to assist people interested in or engaged in agricultural pursuits. Data on crop conditions, production, marketings and income are available from the Statistics Division. Farm information is dispensed daily over private radio stations, over TV stations and to the press by the Information Division.

**Alberta.**—The Alberta Department of Agriculture has seven Divisions. The Plant Industry Division administers programs and policies relating to crop improvement; crop protection and pest control; soils and soil conservation; weed control; horticulture; apiculture and special projects. A crop diagnostic service is offered through a Crop Clinic at Edmonton and horticultural services at a Horticultural Station at Brooks; a Tree Nursery at Oliver provides trees for farm planting.

The Animal Industry Division administers legislation, policies and programs in the broad area of livestock, dairy and poultry production and in processing and marketing, including: setting standards for and approving public sales of sires; sire purchase assistance; ROP programs for beef cattle, swine and sheep; extension programs for all classes of stock; administering standards and qualifications for the artificial insemination (AI) industry; supervising feeder associations; brand registration and inspection; licensing of butchers, livestock dealers, stockyards and AI technicians; pound districts and sale of horned cattle. The testing, grading and purchasing of raw produce by all dairy plants are under regulation, as are standards of construction, manufacture, processing, sanitation and temperature control for dairy and frozen-food plants. A regular cow-testing service to provide the basis for breeding, feeding and culling dairy cattle is available to dairy producers, and chemical and bacteriological analyses are conducted for industrial directives. Licences are issued to poultry hatcheries, wholesalers, first receivers and truckers and programs are conducted for control of pullorum-typhoid diseases of chicken and turkey hatching egg supply flocks; extension programs, cost studies, disease tests and surveys, and research projects with respect to poultry are also carried out.

The Veterinary Services Division provides diagnoses of livestock and poultry diseases and conducts investigations of disease conditions; provides lecture services for the University of Alberta and for other groups; promotes policies aimed at reducing losses such as brucellosis control, stockyard inspection, swine health programs, mastitis, etc.; and administers the licensing and exporting of live fur bearing animals and pelts and assists fur farmers in care, management and stock improvement.

The Extension Branch of the Agricultural Extension and Colleges Division operates 49 offices and employs 64 district agriculturists and 23 district home economists who supply information and guidance to farm families and promote progressive agricultural or home-making policies and programs; the program for 526 4-H Clubs with 1,917 adult leaders is administered; two headquarters engineers and five regional engineers assist farm families with engineering problems; five broadcasts are conducted each week over ten radio stations and weekly bulletins are issued to radio and the press; and publications are supplied to the rural public and visual aids to department staff members. Agricultural and vocational colleges are operated at Olds, Vermilion and Fairview, all three offering five courses in agriculture—a general course, or majors in plant science, animal science, agricultural mechanics and farm management; a complete business course; and a short course in land appraisal and assessment. Special courses include horticulture, fashion and design, irrigation technology at Olds; home economics and AI technician training at Vermilion; and motor mechanics and welding at Fairview.

The Agricultural Economics Division provides extension information on farm management, credit and marketing to aid farmers in instituting good business practices on the



farm; collects, analyses and disseminates agricultural statistics in collaboration with the Dominion Bureau of Statistics; conducts studies on farm production costs and returns, marketing, and resource and rural development; and provides advisory assistance on economic matters to government departments, the agricultural industry and farm groups. Credit is made available to farmers for the purchase of land under the Farm Purchase Credit Act and for home improvements under the Farm Home Improvement Act.

The Water Resources Division administers legislation involving the use of water by individuals or organizations within Alberta and adjoining provinces. Division engineers construct drainage, irrigation, water supply, river control and erosion control projects when it is in the public interest to do so, and staff agrologists are concerned with land levelling for irrigation purposes, assisting settlers, etc. Alberta's large-scale water conservation and utilization program is a direct responsibility of the Division.

The Department also has a Program Development Division which administers the provincial ARDA program, the lands and forest land utilization program, research liaison with the University of Alberta, agricultural liaison on water resource development, trusteeship of the Lethbridge Northern and United Irrigation Districts, provides agricultural representation on the Highways Traffic Board, etc. The Agricultural Products Marketing Council establishes and regulates marketing boards and commissions which assist in the marketing of agricultural products. A new policy is being developed for the administration, operation, maintenance and reconstruction of irrigation projects and districts in the province.

**British Columbia.**—The Department of Agriculture has four main branches. The Administrative Branch is responsible for the general direction of agricultural policies, the administration of legislation affecting agriculture and the compilation of reports and publications. This Branch also maintains direct supervision of the Field Crops, Soil Survey, Plant Pathology, Entomology, Apiary, Markets and Statistics, Farmers' Institutes and Women's Institutes Branches.

The Livestock Branch engages in the promotion and supervision of the livestock industry and provides veterinary services affecting disease control regulations; its work also includes supervision of stock brands, inspection of dairy and fur farm premises, and inspection of licensed abattoirs too small to qualify for federal inspection services. In addition, the Branch supervises the operations of the Dairy Branch in the inspection of commercial dairy premises, dairy farms and the laboratory testing of fluid milk. Officials are stationed at 11 centres throughout the province. The Poultry Branch offers extension services to the poultry industry.

The Horticulture Branch supervises fruit, vegetable and seed production, and provides advice on plant diseases and insect pest control. The Branch maintains field offices at nine points in the southern section of the province.

The Agricultural Development and Extension Branch offers general information services to farmers through 17 offices which cover all major farming districts. In addition, this Branch provides agricultural engineering service, supervision of the government land-clearing program and farm labour services, and promotes junior club projects.

### **Subsection 2.—Agricultural Schools, Colleges and Universities**

All of the provinces of Central and Western Canada have agricultural colleges in association with universities that give courses leading to degrees in agricultural science and home economics and also provide postgraduate courses; Ontario, Quebec and Saskatchewan have veterinary colleges. In addition, all of these provinces have schools of agriculture or diploma courses that provide basic training for young people intending to return to farms or interested in employment in businesses allied with agriculture.

In the Maritime Provinces, training in scientific agriculture is available at colleges in Prince Edward Island and Nova Scotia where courses leading to third-year admission to degree courses elsewhere are given. Vocational and short courses are available in all three provinces. All colleges of agriculture engage in research and extension activities.



### Section 3.—Statistics of Agriculture\*

The collection, compilation and publication of statistics relating to agriculture is a responsibility of the Dominion Bureau of Statistics. Valuable information is obtained through the Censuses of Canada, through partial-coverage mailed questionnaire surveys and from the administrative records of government operations. Because preliminary results of the Census of Agriculture taken June 1, 1966 will be available by April-June 1967 and final results by the end of the year, Section 4 of this Chapter, which normally summarizes the latest census data, contains only basic 1961 data (see p. 503).

The Bureau collects and publishes primary and secondary statistics of agriculture on an annual and monthly basis. The primary statistics relate mainly to the reporting of crop conditions, crop and livestock estimates, wages of farm labour and prices received by farmers for their products. The secondary statistics relate to farm income and expenditure, per capita food consumption, marketing of grain and livestock, dairying, milling and sugar industries and cold storage holdings. In the collection of annual and monthly statistics, the Canada Department of Agriculture and various provincial departments, as well as such agencies as the Board of Grain Commissioners and the Canadian Wheat Board, contribute statistical data to the Bureau and aid directly in DBS survey work. Many thousands of farmers throughout Canada send in reports voluntarily and dealers and processors also provide much valuable data. The figures contained in this Section do not include estimates for Newfoundland; agriculture plays a relatively minor part in Newfoundland's economy and commercial production of most agricultural products is quite small. In the following Subsections, details are given for 1965 with earlier comparisons; figures for the latest year are subject to revision and it should be noted that many of those given for earlier years have been revised since the publication of the 1966 Year Book.

#### Subsection 1.—Income from Farming Operations

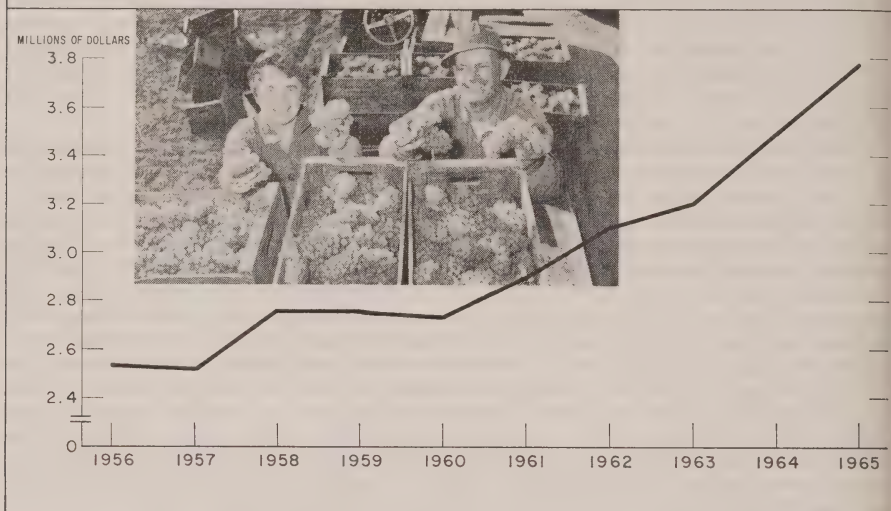
**Cash Receipts from Farming Operations.**—Estimates of cash receipts from farming operations include data concerning cash receipts from the sale of farm products, Canadian Wheat Board participation payments on previous years' grain crops, net cash advances on farm-stored grains in Western Canada, deficiency payments made by the Agricultural Stabilization Board, and supplementary payments. Farm cash receipts from the sale of farm products include the returns from all sales of agricultural products except those associated with direct inter-farm transfers. The prices used to value all products sold are prices to farmers at the farm level; they include any subsidies, bonuses and premiums that can be attributed to specific products but do not include storage, transportation, processing and handling charges which are not actually received by farmers.

The DBS has recently revised its estimates of farm cash receipts from farming operations back to 1940. These revisions were based on the most up-to-date information from private and government sources including the Censuses of Agriculture and the 1958 farm expenditure and income survey. They also reflect changes in methods of calculation.

Total cash receipts from farming operations for 1965, excluding supplementary payments, are estimated at \$3,775,800,000 for Canada, excluding Newfoundland; this estimate is a record high and exceeds by 8.2 p.c. the previous high of \$3,488,200,000 established in 1964. The most important contribution to the increase was made by cattle and calves; lesser increases of varying amounts also occurred in the case of hogs, poultry products, dairy products, potatoes, rapeseed, barley, and Canadian Wheat Board participation payments. The most important offset to these gains was a substantial reduction in cash receipts from the sale of wheat; much less significant reductions were recorded for flaxseed, soybeans, fruits and tobacco. Increases in cash receipts occurred in all provinces, the gains ranging from about 5 p.c. in Saskatchewan and British Columbia to just over 27 p.c. in Prince Edward Island.

\* Revised in the Agriculture Division, Dominion Bureau of Statistics.

### CASH RECEIPTS FROM FARMING OPERATIONS 1956-65



Supplementary payments to farmers in 1965 totalled \$28,300,000 as against \$8,500,000 in 1964. The total for 1964 consisted entirely of payments made under the provisions of the Prairie Farm Assistance Act,\* whereas in 1965 these payments included, in addition to PFAA payments, supplementary payments of \$16,900,000 made by the Federal Government to eligible milk and cream producers. Farm cash receipts from farming operations and total supplementary payments together amounted to \$3,804,100,000, about 9 p.c. above the previous record of \$3,496,700,000 in 1964.

*Field Crops.*—Farmers' returns from the sale of field crops plus cash advances on farm-stored grains in Western Canada and Canadian Wheat Board payments amounted to \$1,635,200,000 in 1965, only slightly above the 1964 figure of \$1,600,400,000. The 1965 estimate of returns accounted for about 43 p.c. of farmers' total cash receipts from farming operations, whereas a year earlier it represented about 46 p.c.

The maintenance of this level of returns from field crops in 1965 can be attributed for the most part to a substantial increase in Canadian Wheat Board participation payments on previous years' grain crops, larger net cash advances on farm-stored grains and higher cash receipts from potatoes, rapeseed and barley; total participation payments at \$296,800,000 were \$72,300,000 higher than in 1964. The 1965 payments represented final payments on the marketings of the 1963 crops of wheat, oats and barley of 48.2 cents, 9.8 cents and 22.6 cents per bu., respectively. Total returns to potato growers, at \$104,300,000, were approximately 61 p.c. above the 1964 estimate as a result of a very substantial increase in prices, and the higher receipts from the sale of barley and rapeseed reflect increased marketings. Offsetting these gains to a considerable extent were lower cash receipts from wheat, flaxseed, soybeans, fruits and tobacco, due for the most part to lower marketings. Wheat showed the most significant decline, total receipts dropping to \$658,900,000 from \$738,600,000 in 1964.

\* Payments to farmers under the provisions of the Prairie Farm Assistance Act are made from the Prairie Farm Emergency Fund to which farmers contribute by means of a 1-p.c. levy on grain marketings.

*Livestock and Livestock Products.*—Cash receipts to producers of livestock and livestock products amounted to \$2,101,100,000 in 1965, about 13 p.c. above the level of 1964. Increases in both prices and marketings moved returns from cattle and calves sharply upward from \$640,500,000 to \$772,700,000, a gain of almost 21 p.c., and a substantial increase in average hog prices far more than offset some reduction in marketing to give cash receipts from this source of \$378,700,000, nearly 18 p.c. above 1964.

Producers of poultry products received about 10 p.c. more cash in 1965 than in 1964. Higher average prices for eggs more than compensated for a slight decrease in production and both higher prices and production of poultry meat contributed to the higher return. Output of dairy products was down fractionally but higher prices brought the return up to \$556,400,000 from \$533,900,000 a year earlier; in addition, eligible producers of milk and cream received \$16,900,000 in the form of supplementary payments.

#### 4.—Cash Receipts from Farming Operations, 1962-65

Item	1962	1963	1964	1965
	\$'000	\$'000	\$'000	\$'000
<b>Grains, Seeds and Hay</b> .....	<b>902,884</b>	<b>947,851</b>	<b>1,199,106</b>	<b>1,214,502</b>
Wheat.....	525,884	597,705	738,552	658,902
Wheat participation payments.....	152,523	123,968	199,744	271,974
Oats.....	33,177	45,420	33,206	31,729
Oats participation payments.....	4,301	—	10,673	4,707
Barley.....	52,540	67,907	72,137	75,836
Barley participation payments.....	24,244	—	14,092	20,093
Canadian Wheat Board net cash advance payments.....	5,916	11,203	-12,123	5,997
Rye.....	8,581	7,693	8,030	9,449
Flaxseed.....	48,570	37,320	60,947	47,295
Rapeseed.....	10,127	11,730	17,957	26,772
Soybeans.....	14,906	13,463	19,091	14,329
Corn.....	11,748	16,382	23,536	28,174
Clover and grass seed.....	10,367	15,060	13,264	16,245
<b>Vegetables and Other Field Crops</b> .....	<b>231,024</b>	<b>263,082</b>	<b>261,644</b>	<b>287,282</b>
Potatoes.....	45,932	49,882	64,753	104,299
Vegetables.....	75,126	74,108	79,362	81,844
Sugar beets.....	13,706	26,138	19,891	12,005
Tobacco.....	96,260	112,954	97,638	89,134
<b>Livestock and Poultry</b> .....	<b>1,133,620</b>	<b>1,116,718</b>	<b>1,144,655</b>	<b>1,353,832</b>
Cattle and calves.....	657,400	631,495	640,507	772,723
Sheep and lambs.....	10,681	9,715	9,419	9,302
Hogs.....	312,221	306,646	321,574	378,746
Poultry.....	153,318	168,862	173,155	192,061
<b>Dairy Products</b> .....	<b>499,576</b>	<b>509,803</b>	<b>533,920</b>	<b>556,371</b>
<b>Fruits</b> .....	<b>58,355</b>	<b>66,433</b>	<b>73,491</b>	<b>63,551</b>
<b>Other Principal Farm Products</b> .....	<b>158,836</b>	<b>168,255</b>	<b>148,089</b>	<b>163,525</b>
Eggs.....	141,601	148,381	132,566	145,000
Wool.....	1,820	1,960	1,999	1,551
Honey.....	5,204	7,230	6,874	7,933
Maple products.....	10,211	10,684	6,650	9,041
<b>Miscellaneous Farm Products</b> .....	<b>68,987</b>	<b>77,688</b>	<b>80,221</b>	<b>85,714</b>
<b>Forest Products</b> .....	<b>25,676</b>	<b>25,072</b>	<b>24,573</b>	<b>24,056</b>
<b>Fur Farming</b> .....	<b>19,351</b>	<b>21,776</b>	<b>20,930</b>	<b>21,500</b>
<b>Deficiency Payments—</b>				
Eggs.....	577	59	867	1,838
Sugar beets.....	733	1,251	—	4,033
Potatoes.....	957	1	—	—
Wool.....	1,212	964	692	546
<b>Totals, Cash Receipts from Farming Operations</b> .....	<b>3,101,788</b>	<b>3,198,953</b>	<b>3,488,188</b>	<b>3,775,750</b>
<b>Supplementary Payments—</b>				
Prairie Farm Assistance Act.....	70,313	14,769	8,477	11,433
Dairy.....	—	—	—	16,912
<b>Totals, Cash Receipts</b> .....	<b>3,172,101</b>	<b>3,213,722</b>	<b>3,496,665</b>	<b>3,804,095</b>



## 5.—Cash Receipts from Farming Operations, by Province, 1962-65

Province	1962	1963	1964	1965
	\$'000	\$'000	\$'000	\$'000
Prince Edward Island.....	24,284	25,223	31,654	40,255
Nova Scotia.....	46,792	47,605	46,455	50,585
New Brunswick.....	40,913	40,867	47,372	59,434
Quebec.....	442,218	454,417	458,212	506,569
Ontario.....	924,199	997,793	1,020,370	1,091,712
Manitoba.....	249,764	268,459	297,517	337,392
Saskatchewan.....	673,004	692,013	836,254	878,940
Alberta.....	552,394	523,074	597,453	650,563
British Columbia.....	148,220	149,502	152,901	160,296
<b>Totals.....</b>	<b>3,101,788</b>	<b>3,198,953</b>	<b>3,488,188</b>	<b>3,775,750</b>

**Net Income of Farm Operators from Farming Operations.**—Two different estimates of net income from farming operations are prepared by the Agriculture Division. One is called *realized net income* and is obtained by adding together cash income from farming operations, supplementary payments and the value of income in kind, and deducting farm operating expenses and depreciation charges. This estimate of farm net income represents the amount of income from farming that operators have left for family living or investment after provision has been made for operating expenses and depreciation charges. The second estimate is referred to as *total net income* and is obtained by adjusting realized net income to take into account changes occurring in inventories of livestock and stocks of grains on farms between the beginning and the end of the year. The latter estimate is the one used to calculate the contribution of agriculture to national income.

Realized farm net income reached an estimated \$1,595,800,000 in 1965, an amount 13.4 p.c. above the 1964 estimate of \$1,407,800,000 and 27.6 p.c. higher than the average of \$1,250,700,000 for the five-year period 1960-64. Although farm operating expenses and depreciation charges moved up 6.3 p.c. during 1965, this increase was more than offset by higher total receipts from the sale of farm products, supplementary payments and income in kind. Changes from 1964 to 1965 in these items are covered in Table 6. Income in kind, which is the value of the farm consumption of home-produced farm products plus an imputed rental value of the farm dwelling, totalled \$432,800,000 in 1965 compared with \$396,400,000 in the previous year, an advance accounted for by an increase in the value of consumption of meat, poultry products, fruits and vegetables and a higher imputed rental value for the farm dwellings.

All items considered in estimating farm operating expenses were higher in 1965 than in 1964. For the third consecutive year, fertilizer accounted for the greatest percentage increase in outlay, reflecting a combination of higher prices and increased consumption. In absolute terms, the most important gain was recorded for feed, the result of substantially increased quantities purchased through commercial channels. Expenditures for hired help continued to rise as wages climbed and increasing use of credit was reflected in a steady rise in farmers' interest payments. Farm land rental payments were up substantially, mainly as a result of the higher share-rental payments arising out of larger crop production in Saskatchewan and Alberta. The steady year-to-year rise in the allowance for depreciation, which was extended into 1965, reflects the continued expansion of mechanization on Canadian farms.

Total farm net income, estimated at \$1,660,300,000 in 1965, was 26.4 p.c. above the 1964 level of \$1,313,200,000 and 29.0 p.c. above the 1960-64 average. Farm inventories of grains in the Prairie Provinces increased substantially between the beginning and the end of the year as a result of a high level of production; this, together with an increased year-end carryover of tobacco, more than offset some decline in livestock numbers.

## 6.—Net Income of Farm Operators from Farming Operations, by Item and by Province, 1962-65

(Exclusive of Newfoundland)

NOTE.—Includes estimated rental value of farm homes, supplementary payments made under the provisions of the Prairie Farm Assistance Act and payments under the Western Grain Producers' Acreage Payment Regulations.

Item and Province	1962	1963	1964	1965
	\$'000	\$'000	\$'000	\$'000
<b>Item</b>				
1. Cash receipts from farming operations.....	3,101,788	3,198,953	3,488,188	3,775,750
2. Income in kind.....	360,189	375,070	396,431	432,839
3. Supplementary payments.....	70,313	14,769	8,477	28,345
4. Realized gross income (Items 1+2+3).....	3,532,290	3,588,792	3,893,096	4,236,934
5. Operating and depreciation charges.....	2,228,152	2,377,044	2,485,311	2,641,140
6. Realized net income (Items 4-5).....	1,304,138	1,211,748	1,407,785	1,595,794
7. Value of inventory changes.....	187,498	289,942	-94,587	64,496
8. Total gross income (Items 4+7).....	3,719,788	3,878,734	3,798,509	4,301,430
<b>Totals, Net Income (Items 8-5).....</b>	<b>1,491,636</b>	<b>1,501,690</b>	<b>1,313,198</b>	<b>1,660,290</b>
<b>Province</b>				
Prince Edward Island.....	6,726	7,827	12,817	15,268
Nova Scotia.....	18,512	18,525	16,120	18,418
New Brunswick.....	11,701	11,093	16,875	21,920
Quebec.....	161,313	146,200	139,853	161,959
Ontario.....	337,883	315,059	314,115	369,076
Manitoba.....	162,146	106,932	156,755	164,628
Saskatchewan.....	453,503	541,435	338,448	527,594
Alberta.....	270,471	285,161	247,175	312,408
British Columbia.....	69,381	69,458	71,040	69,019

### Subsection 2.—Volume of Agricultural Production

The index of physical volume of agricultural production for Canada established a high of 166.3 in 1965 (1949 = 100), a point 9.8 p.c. above the estimate for 1964 and 2.1 p.c. above the previous record set in 1963. The increase in 1965 over 1964 can be attributed for the most part to a higher production of grains, cattle and poultry meat which more than offset a reduction in the output of hogs. The index was higher than in 1964 for all provinces except Prince Edward Island and New Brunswick. In Prince Edward Island, a lower production of potatoes and eggs more than outweighed moderate increases in cattle and hogs. In New Brunswick, lower production of potatoes and a cut in the output of hogs and eggs more than offset an increase in poultry meat.

In the Prairie Provinces the substantial increases reflected larger grain crops and higher cattle production which more than compensated for some reduction in hogs and poultry products; in Quebec, production of cattle, hogs and potatoes was down but poultry products and fruits were up; in Ontario, production was up for all commodities except calves, hogs, eggs and fruits; in Nova Scotia the over-all increase was attributable mainly to a higher output of poultry products and fruits; in British Columbia, potatoes, cattle and poultry products were up but not quite enough to offset decreases in hogs and fruits.

The index of physical volume of agricultural production is a measure of unduplicated gross farm production. In its construction, provision has been made to avoid double counting of farm output. Within a province, such double counting occurs when feed grains, credited to field crop production, are fed to livestock, and appear later as livestock and livestock products. Interprovincially, this duplication occurs when feed grains produced in one province are fed in another, and when feeder cattle raised in one section of the country are shipped to another for finishing.

## 7.—Index Numbers of Physical Volume of Agricultural Production, by Province, 1956-65

(1949=100. Exclusive of Newfoundland)

NOTE.—For a description of the index, methods and coverage, see DBS publication *Index of Farm Production 1962* (Catalogue No. 21-203).

Year	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
1956	101.2	115.5	103.2	127.2	113.9	132.2	184.1	165.3	113.7	140.3
1957	107.9	113.9	98.1	128.0	118.9	106.8	119.7	133.3	118.9	120.8
1958	106.2	110.8	94.5	133.8	132.4	127.1	117.8	150.0	123.2	129.9
1959	97.7	116.7	91.8	134.3	125.3	122.8	124.9	153.7	128.8	129.8
1960	98.5	117.0	96.8	134.5	128.7	126.2	162.3	150.4	131.8	138.7
1961	99.0	123.2	99.4	144.9	137.6	88.2	79.5	149.5	144.4	122.0
1962	99.7	124.5	94.5	151.8	142.1	149.6	166.1	160.3	152.3	150.9
1963	97.8	127.6	95.2	150.4	141.0	128.4	219.4	181.9	150.4	162.9
1964	103.5	125.5	97.6	149.2	144.0	155.7	151.1	176.4	160.3	151.5
1965	100.6	128.2	97.1	152.9	149.8	166.8	191.7	194.1	160.5	166.3

### Subsection 3.—Field Crops\*

Extremes in weather characterized crop-growing conditions throughout much of Canada during the 1965 season. In the Prairie Provinces seeding was delayed and early growth slowed by generally cool weather but crops developed rapidly during the hot, dry weather that prevailed in late July and early August. However, wheat leaf and stem rusts present over wider than normal areas, combined with very hot weather near the end of the growing season and wet weather that interrupted harvesting, reduced the yield somewhat and caused some losses in grade.

In Central and Eastern Canada, there was a shortage of moisture during the early and mid-portion of the growing season resulting in poor pasture conditions, below-normal yields of hay and generally lowered yield prospects of most crops. However, late summer rains and cool weather encouraged development of most crops in Ontario and Quebec and, despite some delay in maturity, most cereal crop outturns were good. Wet conditions over much of the Maritimes created harvesting difficulties which lowered yields and caused some crop losses in northern areas.

In British Columbia, growing conditions were generally favourable. After a dry mid-season, showers benefited vegetable and later-maturing crops. In the Peace River area of the province grain prospects toward the end of the growing period were fair to good despite late plantings followed by early-season frost damage.

The 1965 index of field crop production for Canada (1949=100), placed at 174.4, was well above the 1964 level of 155.3 but slightly below the 1963 record of 176.5. Manitoba's index reached 170.1, exceeding the previous high of 159.4 established in 1964; Saskatchewan's index, at 212.2, was the third highest for that province, well above the 166.3 reached in 1964 but short of the all-time high of 249.5 in 1963; Alberta's index, at 218.8, was well above the 1964 figure of 186.3 and also above the 1963 next-to-record level of 205.9; and British Columbia's index reached a record 133.4 compared with 132.1 a year earlier. Ontario's record corn and soybean crops helped to maintain its production index at 144.0, compared with the all-time high of 146.1 reached in 1964, but Quebec's index, at 92.8, was much below the 122.2 of the previous year. The 1965 indexes for Prince Edward Island, Nova Scotia and New Brunswick, at 77.8, 58.9 and 78.9, respectively, were each down from comparable levels of the previous year.

Canada's 1965 wheat crop amounted to 648,917,000 bu., some 8 p.c. above the previous year's 600,424,000 bu. and 37 p.c. greater than the ten-year (1954-63) average of 475,100,000 bu. Average yield per acre was up by about 13 p.c., more than offsetting a 5-p.c. decline in seeded acreage. The average protein content of the 1965 crop of hard red spring wheat was 13.5 p.c., compared with 14.9 p.c. in 1964 and with an average of 13.6 p.c. for the period 1927-64.

\* The supply and disposition of the major Canadian grains is dealt with in Chapter XXI, Part I, Sect. 2, under the heading of "The Grain Trade, 1964-65".



Supplies of Canadian feed grains (corn, oats, barley, mixed grains and buckwheat) in the crop year 1965-66 were 5 p.c. above the previous crop year, reflecting increased production of most feed grains which more than offset generally lower carryover stocks compared with the previous year. Compared with 1964-65, supplies of oats (Aug. 1, 1965 carryover of 130,100,000 bu. plus the 1965 production of 415,000,000 bu.) were up about 2 p.c.; supplies of barley (carryover of 88,800,000 bu. plus a crop of 214,600,000 bu.) were up 7 p.c.; and supplies of rye (totalling 25,000,000 bu.) were up 29 p.c. The 1965 record crop of mixed grains at 74,200,000 bu. was up from the 66,400,000 bu. of 1964 and production of grain corn was at an all-time high of 59,600,000 bu. Net feed grain supplies (total supplies less estimated exports, seed requirements and human food and industrial requirements) amounted to 18,100,000 tons, some 7 p.c. above the 1964-65 total of 16,900,000 tons and 13 p.c. above the ten-year (1954-63) average of 16,100,000 tons.

There were 21,099,000 tons of tame hay produced in 1965, 1 p.c. less than in 1964, but the 5,161,000 tons of fodder corn produced was 4 p.c. higher than in the previous year. Significant production increases occurred in 1965 for all oilseed crops except sunflower seed; soybeans and flaxseed were above, rapeseed almost double and mustard seed almost triple the 1964 quantities. Potato production in 1965 at 46,472,000 cwt. was down 3 p.c. from 1964. New Brunswick was the highest producer with an output of 11,280,000 cwt. followed by Ontario, Prince Edward Island and Quebec with 10,584,000 cwt., 7,341,000 cwt. and 7,239,000 cwt., respectively. The 1965 field root crop at 294,000 tons and the sugar beet crop at 1,142,341 tons were both lower than in 1964, owing mainly to the smaller acreage planted.

### 8.—Acreages, Yields and Prices of Principal Field Crops 1961-65, with Average for 1955-59

(Exclusive of Newfoundland)

Crop and Year	Area	Yield per Acre	Pro-duction	Average Price	Total Value <sup>1</sup>	Crop and Year	Area	Yield per Acre	Pro-duction	Average Price	Total Value <sup>1</sup>
	'000 acres	bu.	'000 bu.	\$ per bu.	\$'000		'000 acres	bu.	'000 bu.	\$ per bu.	\$'000
<b>Wheat—</b>						<b>Mixed Grains—</b>					
Av. 1955-59	22,730	20.5	465,618	1.31	608,018	Av. 1955-59	1,513	42.6	64,427	0.81	52,374
1961.....	25,316	11.2	283,394	1.72	486,324	1961.....	1,566	39.2	61,310	0.89	54,775
1962.....	26,817	21.1	565,554	1.66	941,436	1962.....	1,522	47.4	72,186	0.88	63,343
1963.....	27,566	26.2	723,442	1.74	1,259,223	1963.....	1,411	48.2	67,937	0.85	58,050
1964.....	29,686	20.2	600,424	1.59	957,209	1964.....	1,431	46.4	66,395	0.86	57,379
1965.....	28,282	22.9	648,917	<sup>2</sup>	<sup>2</sup>	1965.....	1,506	49.3	74,170	<sup>2</sup>	<sup>2</sup>
<b>Oats—</b>						<b>Flaxseed—</b>					
Av. 1955-59	9,716	38.6	374,764	0.64	238,658	Av. 1955-59	2,593	8.7	22,544	2.68	60,441
1961.....	8,543	33.2	283,965	0.75	212,795	1961.....	2,075	6.9	14,318	3.33	47,612
1962.....	10,591	46.6	493,610	0.67	329,528	1962.....	1,445	11.1	16,042	3.06	49,084
1963.....	9,488	47.8	453,102	0.62	280,797	1963.....	1,682	12.6	21,116	2.91	61,475
1964.....	8,191	43.6	357,178	0.69	247,195	1964.....	1,978	10.3	20,313	2.94	59,768
1965.....	8,656	47.9	414,957	<sup>2</sup>	<sup>2</sup>	1965.....	2,320	12.6	29,254	<sup>2</sup>	<sup>2</sup>
<b>Barley—</b>						<b>Potatoes—</b>					
Av. 1955-59	8,971	26.5	237,926	0.79	187,661	Av. 1955-59	305	132.2	40,297	1.92	77,504
1961.....	5,529	20.4	112,640	1.05	118,810	1961.....	306	144.3	44,108	1.40	61,933
1962.....	5,287	31.4	165,888	0.94	156,036	1962.....	288	162.0	46,671	1.57	73,118
1963.....	6,160	35.8	220,664	0.94	207,937	1963.....	255	160.5	45,809	1.72	78,609
1964.....	5,455	30.6	166,816	1.00	166,249	1964.....	281	169.7	47,733	2.90	138,490
1965.....	6,038	35.5	214,555	<sup>2</sup>	<sup>2</sup>	1965.....	299	155.5	46,472	<sup>2</sup>	<sup>2</sup>
<b>Rye—</b>						<b>Tame Hay—</b>					
Av. 1955-59	577	16.2	9,362	0.92	8,568	Av. 1955-59	11,291	1.72	19,412	15.30	296,922
1961.....	561	11.6	6,519	1.07	6,983	1961.....	12,229	1.70	20,812	15.63	325,327
1962.....	624	19.3	12,044	1.06	12,819	1962.....	12,370	1.82	22,536	15.95	359,354
1963.....	652	19.7	12,848	1.19	15,295	1963.....	12,352	1.86	23,014	16.39	377,101
1964.....	680	18.0	12,220	1.04	12,699	1964.....	12,507	1.71	21,365	18.52	395,593
1965.....	746	22.4	16,695	<sup>2</sup>	<sup>2</sup>	1965.....	12,090	1.66	21,099	<sup>2</sup>	<sup>2</sup>

<sup>1</sup> Gross value of farm production; does not represent cash income from sales.

<sup>2</sup> Not available at time of going to press; will be published in one of the regularly scheduled crop reports and in the *Quarterly Bulletin of Agricultural Statistics* (Catalogue No. 21-003).

# **9.—Acreages, Production and Values of Principal Field Crops, by Province, 1964 and 1965, with Average for 1955-59**

(Exclusive of Newfoundland)

Field Crop and Province	Area			Total Production			Gross Farm Value <sup>1</sup>	
	Average 1955-59	1964	1965	Average 1955-59	1964	1965	Average 1955-59	1964
	'000 acres	'000 acres	'000 acres	'000 bu.	'000 bu.	'000 bu.	\$'000	\$'000
<b>Wheat</b> .....	<b>22,730</b>	<b>29,686</b>	<b>28,282</b>	<b>465,618</b>	<b>600,424</b>	<b>648,917</b>	<b>608,018</b>	<b>957,209</b>
Prince Edward Island...	4	4	4	99	132	97	164	224
Nova Scotia.....	1	1	1	31	29	32	50	50
New Brunswick.....	2	3	6	62	95	167	104	163
Quebec.....	15	11	12	350	283	298	565	481
Ontario—								
Winter.....	560	455	362	19,182	18,246	13,358	26,511	30,653
Spring.....	18	17	14	397	439	365	547	738
Manitoba.....	2,325	3,385	3,240	54,000	85,000	79,000	73,128	138,550
Saskatchewan.....	14,494	19,200	18,500	274,000	348,000	400,000	358,466	556,800
Alberta.....	5,253	6,495	6,050	116,200	145,000	153,000	146,824	224,750
British Columbia.....	58	115	93	1,298	3,200	2,600	1,660	4,800
<b>Oats</b> .....	<b>9,716</b>	<b>8,191</b>	<b>8,656</b>	<b>374,764</b>	<b>357,178</b>	<b>414,957</b>	<b>238,658</b>	<b>247,195</b>
Prince Edward Island...	92	92	89	4,014	5,272	3,519	2,983	4,218
Nova Scotia.....	42	34	31	1,891	1,642	1,293	1,756	1,412
New Brunswick.....	122	82	86	5,081	3,895	3,461	3,925	3,194
Quebec.....	1,271	1,184	1,165	44,582	47,597	41,940	38,017	41,409
Ontario.....	1,644	1,663	1,580	78,756	88,472	89,744	57,774	65,469
Manitoba.....	1,567	1,635	1,525	57,200	73,000	74,000	32,544	47,450
Saskatchewan.....	2,537	1,469	1,920	86,600	54,000	94,000	47,724	34,020
Alberta.....	2,362	1,950	2,200	92,400	79,000	104,000	51,352	47,400
British Columbia.....	89	82	60	4,240	4,300	3,000	2,583	2,623
<b>Barley</b> .....	<b>8,971</b>	<b>5,455</b>	<b>6,038</b>	<b>237,926</b>	<b>166,816</b>	<b>214,555</b>	<b>187,661</b>	<b>166,249</b>
Prince Edward Island...	1	11	12	43	582	433	44	617
Nova Scotia.....	2	2	3	53	75	91	59	86
New Brunswick.....	5	3	3	144	134	117	153	161
Quebec.....	30	14	15	916	506	526	1,026	592
Ontario.....	102	113	140	3,874	5,119	6,888	3,921	5,631
Manitoba.....	1,639	497	601	38,400	16,000	22,000	32,198	16,800
Saskatchewan.....	3,485	1,400	1,750	87,400	34,000	65,000	68,312	34,680
Alberta.....	3,642	3,320	3,390	105,200	107,000	115,000	80,526	104,860
British Columbia.....	65	95	124	1,896	3,400	4,500	1,422	2,822
<b>Fall Rye</b> .....	<b>430</b>	<b>579</b>	<b>642</b>	<b>7,380</b>	<b>11,120</b>	<b>14,885</b>	<b>6,802</b>	<b>11,568</b>
Quebec.....	7	2	3	147	55	69	173	58
Ontario.....	76	56	50	1,708	1,422	1,275	1,783	1,550
Manitoba.....	69	146	148	1,270	3,050	3,340	1,148	3,202
Saskatchewan.....	191	216	263	2,670	3,400	6,000	2,372	3,502
Alberta.....	85	157	177	1,540	3,150	4,150	1,292	3,213
British Columbia.....	2	2	2	45	43	51	35	43
<b>Spring Rye</b> .....	<b>147</b>	<b>101</b>	<b>103</b>	<b>1,982</b>	<b>1,100</b>	<b>1,810</b>	<b>1,766</b>	<b>1,131</b>
Manitoba.....	8	3	3	112	50	60	102	53
Saskatchewan.....	114	73	77	1,520	700	1,300	1,365	721
Alberta.....	25	25	23	350	350	450	299	357
<b>All Rye</b> .....	<b>577</b>	<b>680</b>	<b>746</b>	<b>9,362</b>	<b>12,230</b>	<b>16,695</b>	<b>8,568</b>	<b>12,699</b>
Quebec.....	7	2	3	147	55	69	173	58
Ontario.....	76	56	50	1,708	1,422	1,275	1,783	1,550
Manitoba.....	77	149	151	1,382	3,100	3,400	1,250	3,255
Saskatchewan.....	305	289	340	4,190	4,100	7,300	3,737	4,223
Alberta.....	110	182	200	1,890	3,500	4,600	1,591	3,570
British Columbia.....	2	2	2	45	43	51	35	43
<b>Peas</b> .....	<b>77</b>	<b>71</b>	<b>55</b>	<b>1,264</b>	<b>1,598</b>	<b>1,244</b>	<b>2,721</b>	<b>3,357</b>
Quebec.....	3	2	3	55	53	66	217	238
Ontario.....	6	3	2	105	54	50	260	140
Manitoba.....	51	52	36	747	1,196	800	1,281	2,272
Saskatchewan.....	3	4	3	46	44	60	107	92
Alberta.....	8	8	8	179	198	215	499	499
British Columbia.....	6	2	3	133	53	53	357	116

<sup>1</sup> Values for 1965 not available at time of going to press; see footnote<sup>2</sup>, Table 8.

**9.—Acreages, Production and Values of Principal Field Crops, by Province, 1964 and 1965, with Average for 1955-59—continued**

Field Crop and Province	Area			Total Production			Gross Farm Value <sup>1</sup>	
	Average 1955-59	1964	1965	Average 1955-59	1964	1965	Average 1955-59	1964
	'000 acres	'000 acres	'000 acres	'000 bu.	'000 bu.	'000 bu.	\$'000	\$'000
<b>Beans</b> .....	<b>68</b>	<b>76</b>	<b>86</b>	<b>1,167</b>	<b>1,879</b>	<b>1,986</b>	<b>4,420</b>	<b>7,972</b>
Quebec.....	1	1	1	23	19	14	100	97
Ontario.....	66	75	85	1,143	1,860	1,972	4,320	7,875
<b>Soybeans</b> .....	<b>243</b>	<b>231</b>	<b>265</b>	<b>6,256</b>	<b>6,976</b>	<b>8,030</b>	<b>12,379</b>	<b>20,021</b>
Ontario.....	245	231	265	6,220	6,976	8,030	12,307	20,021
<b>Buckwheat</b> .....	<b>114</b>	<b>60</b>	<b>53</b>	<b>2,248</b>	<b>1,267</b>	<b>863</b>	<b>2,510</b>	<b>1,395</b>
New Brunswick.....	5	3	3	144	122	99	164	146
Quebec.....	39	14	16	926	355	222	1,149	412
Ontario.....	35	16	14	774	390	342	839	437
Manitoba.....	35	26	20	404	400	200	359	400
<b>Mixed Grains</b> .....	<b>1,513</b>	<b>1,431</b>	<b>1,506</b>	<b>64,427</b>	<b>66,395</b>	<b>74,170</b>	<b>52,374</b>	<b>57,379</b>
Prince Edward Island.....	58	45	47	2,580	2,628	1,988	2,262	2,470
Nova Scotia.....	10	9	8	415	460	332	423	483
New Brunswick.....	6	8	8	249	394	318	230	394
Quebec.....	176	92	92	6,281	3,768	3,146	6,790	4,145
Ontario.....	902	725	740	43,427	40,455	44,178	35,003	34,587
Manitoba.....	87	126	146	2,631	4,900	6,000	1,802	4,116
Saskatchewan.....	62	94	125	1,599	2,600	5,000	1,067	2,054
Alberta.....	209	328	335	7,057	11,000	13,000	4,647	9,130
British Columbia.....	4	4	4	187	190	198	149	200
<b>Flatseed</b> .....	<b>2,593</b>	<b>1,978</b>	<b>2,320</b>	<b>22,544</b>	<b>20,313</b>	<b>29,254</b>	<b>60,441</b>	<b>59,768</b>
Quebec.....	—	36	28	—	511	440	—	1,523
Ontario.....	18	24	24	238	383	379	643	1,092
Manitoba.....	662	1,025	1,350	5,040	10,600	16,200	13,604	31,270
Saskatchewan.....	1,411	521	560	11,560	4,500	7,300	30,788	13,185
Alberta.....	493	370	355	5,620	4,300	4,900	15,184	12,642
British Columbia.....	8	2	3	86	19	35	223	56
<b>Rapeseed</b> .....	<b>389</b>	<b>791</b>	<b>1,435</b>	<b>5,508</b>	<b>13,230</b>	<b>22,600</b>	<b>8,774</b>	<b>36,309</b>
Manitoba.....	19	84	145	270	1,470	2,400	458	3,969
Saskatchewan.....	328	303	555	4,621	5,300	10,700	7,349	14,575
Alberta.....	42	404	735	616	6,460	9,500	967	17,765
<b>Sunflower Seed</b> .....	<b>36</b>	<b>78</b>	<b>63</b>	<b>20,058</b>	<b>30,900</b>	<b>29,225</b>	<b>849</b>	<b>1,526</b>
Manitoba.....	32	48	48	16,103	25,200	26,400	719	1,260
Saskatchewan.....	—	23	16	—	3,450	2,475	—	159
Alberta.....	—	8	4	—	2,250	350	—	107
<b>Mustard Seed</b> .....	<b>95</b>	<b>74</b>	<b>157</b>	<b>74,701</b>	<b>47,750</b>	<b>127,370</b>	<b>2,822</b>	<b>1,906</b>
Manitoba.....	2	10	19	209	6,750	16,150	10	338
Saskatchewan.....	—	29	58	—	18,000	49,300	—	648
Alberta.....	95	35	80	74,493	23,000	61,920	2,812	920
<b>Shelled Corn</b> .....	<b>514</b>	<b>660</b>	<b>752</b>	<b>30,718</b>	<b>52,965</b>	<b>59,648</b>	<b>35,554</b>	<b>68,830</b>
Ontario.....	507	650	740	30,539	52,715	59,348	35,353	68,530
Manitoba.....	7	10	12	178	250	300	201	300
<b>Potatoes</b> .....	<b>305</b>	<b>281</b>	<b>299</b>	<b>40,297</b>	<b>47,733</b>	<b>46,472</b>	<b>77,504</b>	<b>138,490</b>
Prince Edward Island.....	44	40	43	7,534	8,372	7,341	11,750	24,279
Nova Scotia.....	10	7	7	1,433	965	858	2,860	2,750
New Brunswick.....	46	54	57	8,662	11,610	11,280	12,988	33,088
Quebec.....	93	61	64	9,813	8,208	7,239	20,441	20,520
Ontario.....	54	53	56	7,112	10,494	10,584	15,497	28,374
Manitoba.....	16	24	26	1,274	2,940	3,100	2,504	8,820
Saskatchewan.....	14	12	12	881	920	970	2,283	3,404
Alberta.....	18	21	23	1,683	2,429	3,000	3,738	9,716
British Columbia.....	10	9	10	1,905	1,795	2,100	5,443	7,539

<sup>1</sup> Values for 1965 not available at time of going to press; see footnote<sup>2</sup>, Table 8.

<sup>2</sup> Fewer than 500 acres.



**9.—Acreages, Production and Values of Principal Field Crops, by Province, 1964 and 1965,  
with Average for 1955-59—concluded**

Field Crop and Province	Area			Total Production			Gross Farm Value <sup>1</sup>	
	Average 1955-59	1964	1965	Average 1955-59	1964	1965	Average 1955-59	1964
	'000 acres	'000 acres	'000 acres	'000 tons	'000 tons	'000 tons	\$'000	\$'000
<b>Field Roots.....</b>	<b>36</b>	<b>25</b>	<b>23</b>	<b>391</b>	<b>339</b>	<b>294</b>	<b>8,419</b>	<b>7,385</b>
Prince Edward Island.....	6	3	3	80	48	26	1,358	1,008
Nova Scotia.....	3	2	2	51	25	23	1,284	475
New Brunswick.....	3	2	2	32	20	16	804	380
Quebec.....	9	6	5	68	44	41	1,805	836
Ontario.....	15	12	12	160	202	188	3,168	4,686
<b>Tame Hay.....</b>	<b>11,291</b>	<b>12,507</b>	<b>12,690</b>	<b>19,412</b>	<b>21,365</b>	<b>21,099</b>	<b>296,922</b>	<b>395,593</b>
Prince Edward Island.....	201	180	181	356	364	246	4,597	4,459
Nova Scotia.....	296	227	229	613	477	428	10,549	7,513
New Brunswick.....	374	280	275	696	540	412	9,849	7,836
Quebec.....	3,464	3,432	3,415	5,962	6,178	4,132	92,154	106,570
Ontario.....	3,278	3,150	3,100	6,233	6,426	5,456	90,040	133,661
Manitoba.....	713	1,078	1,090	1,239	1,600	1,850	14,741	25,600
Saskatchewan.....	785	1,110	1,112	1,016	1,180	2,075	14,812	20,060
Alberta.....	1,829	2,628	2,830	2,521	3,600	5,500	41,202	68,400
British Columbia.....	351	422	458	777	1,000	1,000	18,978	21,500
<b>Fodder Corn.....</b>	<b>375</b>	<b>425</b>	<b>470</b>	<b>3,637</b>	<b>4,974</b>	<b>5,161</b>	<b>17,527</b>	<b>29,332</b>
Quebec.....	68	55	60	626	636	629	3,997	4,166
Ontario.....	282	315	350	2,854	4,032	4,130	12,409	23,184
Manitoba.....	21	49	53	108	245	316	708	1,470
Saskatchewan.....	2	2	2	5	6	9	65	72
British Columbia.....	3	4	5	44	55	77	349	440
<b>Sugar Beets.....</b>	<b>87</b>	<b>101</b>	<b>85</b>	<b>1,098</b>	<b>1,298</b>	<b>1,142</b>	<b>15,521</b>	<b>19,091</b>
Quebec.....	6	11	9	68	151	160	953	2,440
Ontario.....	24	19	11	329	336	216	3,998	4,243
Manitoba.....	21	30	26	208	285	262	2,918	4,034
Alberta.....	37	42	39	493	527	504	7,652	8,374

<sup>1</sup> Values for 1965 not available at time of going to press; see footnote<sup>2</sup>, Table 8.

**10.—Acreages and Production of Grain in the Prairie Provinces, 1961-65**

Grain	1961	1962	1963	1964	1965
	ACREAGES				
	'000 acres	'000 acres	'000 acres	'000 acres	'000 acres
Wheat.....	24,629	26,237	26,996	29,080	27,790
Oats.....	5,122	7,152	6,260	5,054	5,645
Barley.....	5,361	5,097	5,922	5,217	5,741
Rye.....	493	556	583	620	691
Flaxseed.....	2,051	1,396	1,629	1,916	2,265
Rapeseed.....	710	371	478	791	1,435
Grain	PRODUCTION				
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.
Wheat.....	260,000	546,000	703,000	578,000	632,000
Oats.....	129,000	322,000	304,000	206,000	272,000
Barley.....	106,000	158,000	213,000	157,000	202,000
Rye.....	4,836	10,400	11,180	10,700	15,300
Flaxseed.....	13,900	15,300	20,300	19,400	28,400
Rapeseed.....	11,220	5,860	8,360	13,230	22,600

**Stocks of Canadian Grain.**—Table 11 shows the stocks of Canadian grain on hand in Canada and in the United States on July 31 for the years 1961-65, with averages for the five-year periods 1950-54 and 1955-59. Stocks in Canada are separated into those in commercial positions and those on farms. Stocks on farms and in country elevators in the Prairie Provinces are given separately.

**11.—Carryover of Canadian Grain as at July 31, 1961-65, with Averages for 1950-54 and 1955-59**

Grain and Year	Total in Canada and United States	Total in Canada	In Commercial Storage in Canada	On Farms in Canada	Prairie Provinces	
					On Farms	In Country Elevators
	bu.	bu.	bu.	bu.	bu.	bu.
<b>Wheat—</b>						
Av. 1950-54.....	304,088,145	303,087,359	227,189,959	75,897,400	73,600,000	113,508,787
Av. 1955-59.....	617,264,667	616,947,244	401,923,244	215,024,000	211,600,000	235,770,759
1961.....	607,840,667	607,840,667	437,390,667	170,450,000	168,000,000	244,893,302
1962.....	391,058,273	391,058,273	331,888,273	59,170,000	56,000,000	160,966,460
1963.....	487,247,241	487,247,241	422,547,241	64,700,000	63,000,000	231,420,969
1964.....	459,440,123	459,440,128	338,800,128	120,640,000	118,000,000	193,860,624
1965.....	513,024,073	513,024,073	403,924,073	109,100,000	107,000,000	238,611,266
<b>Oats—</b>						
Av. 1950-54.....	103,723,676	102,717,439	34,956,239	67,761,200	55,500,000	20,442,787
Av. 1955-59.....	140,236,549	140,051,508	43,511,508	96,540,000	78,800,000	28,289,269
1961.....	115,153,740	115,153,740	21,453,740	93,700,000	75,000,000	11,192,401
1962.....	79,066,164	79,066,164	22,166,164	56,900,000	36,000,000	14,029,060
1963.....	150,278,486	150,278,486	57,878,486	92,400,000	68,000,000	40,401,480
1964.....	179,407,849	179,407,849	50,607,849	128,800,000	108,000,000	38,930,666
1965.....	130,120,562	130,120,562	39,420,562	90,700,000	68,000,000	23,648,678
<b>Barley—</b>						
Av. 1950-54.....	82,186,470	82,028,552	44,888,752	37,139,800	36,200,000	24,153,330
Av. 1955-59.....	118,906,634	118,783,588	60,532,588	58,251,000	56,000,000	37,528,726
1961.....	112,557,260	112,262,633	52,162,633	60,100,000	58,000,000	29,376,809
1962.....	57,824,054	57,824,054	31,544,054	26,280,000	24,000,000	17,615,208
1963.....	89,245,306	89,245,306	60,295,306	28,950,000	27,000,000	41,360,678
1964.....	118,270,178	118,270,178	58,270,178	60,000,000	58,000,000	37,713,677
1965.....	88,776,413	88,776,413	52,976,413	35,800,000	34,000,000	35,148,419
<b>Rye—</b>						
Av. 1950-54.....	11,656,052	11,000,586	6,136,186	4,864,400	4,786,000	2,031,544
Av. 1955-59.....	13,467,828	13,237,663	5,078,663	8,159,000	7,820,000	2,327,160
1961.....	7,417,007	7,417,007	4,817,007	2,600,000	2,400,000	1,931,297
1962.....	3,788,786	3,717,786	2,527,786	1,190,000	1,150,000	733,490
1963.....	4,159,399	4,159,399	3,609,399	550,000	530,000	1,605,693
1964.....	7,051,748	6,624,181	4,974,181	1,650,000	1,600,000	2,415,499
1965.....	8,301,805	7,927,959	6,227,959	1,700,000	1,700,000	2,556,448
<b>Flaxseed—</b>						
Av. 1950-54.....	3,273,720	3,273,720	2,285,920	987,800	965,000	417,047
Av. 1955-59.....	5,068,048	5,068,048	3,752,448	1,315,600	1,296,000	913,866
1961.....	7,579,801	7,579,801	6,169,801	1,410,000	1,400,000	1,254,024
1962.....	5,268,927	5,268,927	3,948,927	1,320,000	1,300,000	1,266,994
1963.....	3,988,169	3,988,169	3,178,169	810,000	800,000	1,444,034
1964.....	6,550,719	6,550,719	5,250,719	1,300,000	1,300,000	1,873,753
1965.....	7,141,165	7,141,165	6,141,165	1,000,000	1,000,000	2,266,167

#### Subsection 4.—Livestock and Poultry

**Livestock.**—Several new records were set in 1965 by the livestock industry. Public markets established the highest volume ever recorded in weekly deliveries. Higher prices were received for most classes of livestock and domestic and export demand remained consistently broad. The 551,983 head of cattle exported was the second highest number

on record, exceeded only in 1958; exports of live calves also increased substantially, amounting to 60,940 head. There was an important change in the export-import trade compared with 1964 in that no slaughter cattle or calves were imported from the United States in 1965. Despite higher prices during most of the year, the over-all averages for all cattle and calves were about the same as in 1964; this was due to the exceptionally heavy volume of cows marketed, another noteworthy feature of 1965. At June 1, 1965 the number of cattle and calves in Canada (excluding Newfoundland and the Territories) was estimated at a record 13,001,000, a 1.4-p.c. increase over June 1 of the previous year. Beef cow numbers continued to increase in number and at 2,870,800 were up 5.2 p.c. but milk cow numbers declined by about 1 p.c. to 2,885,000, the lowest since 1916.

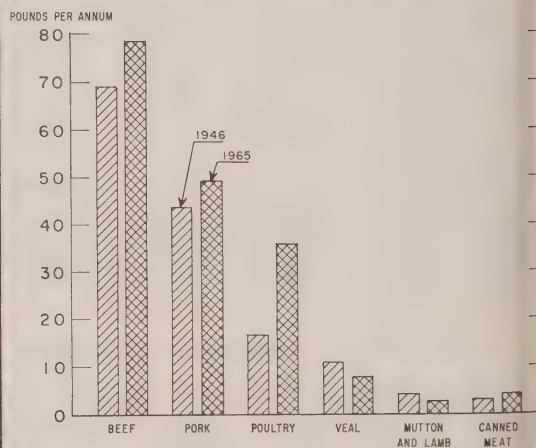
Higher prices were obtained for hogs during the year, moving to all-time highs in November and December; the year's high of \$43.60 for Grade A hogs was reached at Toronto on Dec. 28. Total marketings were 2.8 p.c. below those of the previous year, but were the fifth largest on record; Grade A hogs made up 41.1 p.c. of the total marketings, also a new high. At June 1, 1965 the hog inventory stood at 5,136,000, down 9 p.c. from the same date of 1964.

The number of sheep on farms at June 1 was 1,167,000, the lowest since the start of recordings in 1920. There was a sharp increase in the direct export of live animals at 20,780 compared with 9,747 in 1964 but live imports at 17,660 were down almost a third.

Per capita disappearance of all red meats in 1965 was estimated at 146.3 lb., 2.8 lb. lower than in 1964. The figures for individual meats were: beef 78.7 lb. (78.5 in 1964); veal 8.0 lb. (6.9); mutton and lamb 2.8 lb. (3.4); pork 49.2 lb. (52.0); offal 3.4 lb. (3.8) and canned meats 4.2 lb. (4.5). All figures are on a cold dressed carcass basis.



PER CAPITA CONSUMPTION OF MEAT,  
1946 AND 1965





## 12.—Livestock on Farms and Average Value per Head, by Province, 1956, 1964 and 1965

(Exclusive of Newfoundland and the Yukon and Northwest Territories)

Province and Item	Livestock on Farms			Average Value per Head		
	1956	1964	1965	1956	1964	1965
	'000	'000	'000	\$	\$	\$
<b>Prince Edward Island—</b>						
Horses.....	14.6	5.3	4.8	91	137	145
Milk cows <sup>1</sup> .....	43.8	37.0	39.0	131	182	182
Other cattle.....	79.9	87.0	91.0	62	90	87
Sheep.....	33.4	18.0	14.0	15	14	15
Swine.....	46.7	61.0	70.0	25	26	28
<b>Nova Scotia—</b>						
Horses.....	17.9	6.6	6.1	119	180	187
Milk cows <sup>1</sup> .....	82.8	59.0	57.0	124	171	171
Other cattle.....	104.6	100.0	100.0	61	93	90
Sheep.....	83.2	47.0	44.0	15	14	13
Swine.....	32.7	56.0	62.0	26	28	27
<b>New Brunswick—</b>						
Horses.....	19.3	6.8	6.1	119	198	206
Milk cows <sup>1</sup> .....	85.6	58.0	56.0	130	161	163
Other cattle.....	98.0	95.0	94.0	58	88	86
Sheep.....	64.0	34.5	32.0	15	14	14
Swine.....	53.8	43.0	38.0	26	27	27
<b>Quebec—</b>						
Horses.....	163.5	78.0	71.0	148	206	210
Milk cows <sup>1</sup> .....	1,054.3	1,060.0	1,086.0	130	174	176
Other cattle.....	947.9	922.0	904.0	55	78	78
Sheep.....	338.6	144.0	133.0	14	14	15
Swine.....	887.1	1,036.0	932.0	25	27	30
<b>Ontario—</b>						
Horses.....	139.6	83.0	79.0	109	174	174
Milk cows <sup>1</sup> .....	1,025.9	954.0	943.0	155	220	221
Other cattle.....	1,875.8	2,349.0	2,401.0	93	127	124
Sheep.....	393.8	310.0	302.0	19	19	19
Swine.....	1,548.3	2,060.0	1,940.0	26	29	31
<b>Manitoba—</b>						
Horses.....	75.1	39.0	37.0	82	127	116
Milk cows <sup>1</sup> .....	223.0	182.0	176.0	141	203	189
Other cattle.....	648.5	957.0	974.0	86	129	119
Sheep.....	73.1	66.0	57.0	15	14	15
Swine.....	310.5	450.0	408.0	22	25	27
<b>Saskatchewan—</b>						
Horses.....	170.7	84.0	79.0	65	104	106
Milk cows <sup>1</sup> .....	272.2	193.0	178.0	140	207	193
Other cattle.....	1,596.8	2,107.0	2,162.0	90	136	126
Sheep.....	142.7	165.0	150.0	14	15	15
Swine.....	591.9	505.0	405.0	21	26	26
<b>Alberta—</b>						
Horses.....	154.6	96.0	92.0	64	112	112
Milk cows <sup>1</sup> .....	282.2	274.0	262.0	148	210	192
Other cattle.....	2,167.0	2,861.0	2,933.0	90	135	125
Sheep.....	404.8	409.0	355.0	16	15	15
Swine.....	1,211.5	1,370.0	1,245.0	23	26	27
<b>British Columbia—</b>						
Horses.....	26.8	25.0	23.0	77	135	139
Milk cows <sup>1</sup> .....	90.2	89.0	88.0	139	203	199
Other cattle.....	332.7	433.0	457.0	86	126	118
Sheep.....	86.1	93.0	80.0	17	17	18
Swine.....	48.4	39.0	36.0	27	29	29
<b>Totals—</b>						
Horses.....	782.1	423.7	398.0	95	146	146
Milk cows <sup>1</sup> .....	3,160.0	2,906.0	2,885.0	141	197	194
Other cattle.....	7,851.2	9,911.0	10,116.0	85	126	119
Sheep.....	1,619.7	1,286.5	1,167.0	16	16	16
Swine.....	4,730.9	5,620.0	5,136.0	24	27	29

<sup>1</sup> Cows and heifers, two years old or over, kept for milk purposes.

The Canada Department of Agriculture inspects all livestock in plants designated as inspected establishments under the Meat and Canned Foods Act. A record is kept of these inspections and figures from 1956 are given in Table 13. Local wholesale butcherings and slaughterings carried out by retail butchers and by farmers for their own use are not included. Actually, the slaughtering and meat packing industry is concentrated in a comparatively small number of large establishments to facilitate greater efficiency and utilization of products; thus the figures of Table 13 are fairly inclusive.

Almost 13 p.c. more cattle were slaughtered in inspected establishments in 1965 than in 1964, and slaughterings of calves were up 19 p.c. On the other hand, slaughterings of sheep and lambs declined by 17.7 p.c. and slaughterings of hogs by 3.1 p.c.

### 13.—Livestock Slaughtered at Inspected Establishments, 1956-65

(Exclusive of Newfoundland)

Year	Cattle	Calves	Sheep	Hogs
	No.	No.	No.	No.
1956.....	1,874,363	891,615	599,974	5,548,289
1957.....	1,986,251	887,102	581,903	4,971,477
1958.....	1,889,280	784,767	548,976	5,963,928
1959.....	1,744,185	676,571	569,746	8,020,766
1960.....	1,941,703	712,100	562,678	6,182,315
1961.....	2,041,473	690,286	633,347	5,849,875
1962.....	2,028,159	710,229	567,463	6,031,933
1963.....	2,126,716	671,390	532,015	5,909,506
1964.....	2,422,260	750,319	497,686	6,627,600
1965.....	2,734,514	894,728	409,783	6,421,226

**Poultry.**—Poultry on farms and their values in 1964 and 1965 compared with 1956 are given in Table 14; production and consumption of poultry meat are included in Table 15.

### 14.—Numbers and Values of Poultry on Farms, by Province, as at June 1, 1956, 1964 and 1965

Province and Year	Hens and Chickens		Turkeys		Geese		Ducks		All Poultry	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
	'000	\$'000	'000	\$'000	'000	\$'000	'000	\$'000	'000	\$'000
Newfoundland.....	..	..	..	..	..	..	..	..	..	..
Prince Edward Is... 1956	812	795	14	33	9	22	5	7	840	85
1964	445	475	9	49	4	15	2	3	460	54
1965	435	448	10	51	6	22	2	5	453	52
Nova Scotia..... 1956	1,909	2,600	54	165	3	8	2	3	1,968	2,77
1964	2,110	2,323	47	231	1	3	1	2	2,158	2,53
1965	2,210	2,403	70	360	1	4	1	2	2,282	2,78
New Brunswick..... 1956	1,125	1,384	45	150	4	12	2	3	1,176	1,54
1964	1,070	1,344	15	77	1	4	1	1	1,087	1,42
1965	1,150	1,346	31	161	1	3	1	2	1,182	1,51
Quebec..... 1956	10,882	12,157	632	2,023	12	37	45	69	11,571	14,28
1964	13,640	13,564	710	3,330	10	36	67	126	14,427	17,05
1965	14,860	13,401	900	4,068	8	28	60	116	15,828	17,61
Ontario..... 1956	24,934	26,040	1,415	4,273	96	231	124	153	26,569	30,69
1964	24,450	22,928	2,910	14,696	78	312	133	261	27,571	38,19
1965	23,665	23,294	3,400	16,286	55	217	140	287	27,260	40,08

**14.—Numbers and Values of Poultry on Farms, by Province, as at June 1,  
1956, 1964 and 1965—concluded**

Province and Year	Hens and Chickens		Turkeys		Geese		Ducks		All Poultry	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
	'000	\$'000	'000	\$'000	'000	\$'000	'000	\$'000	'000	\$'000
Manitoba.....1956	5,990	4,573	664	1,458	48	91	40	41	6,742	6,163
1964	6,270	4,925	885	3,292	75	214	18	29	7,248	8,460
1965	5,820	4,459	1,000	3,760	100	291	40	67	6,960	8,577
Saskatchewan.....1956	8,219	6,021	773	1,697	52	113	78	86	9,122	7,917
1964	6,050	4,132	705	2,679	35	112	50	94	6,840	7,017
1965	5,300	3,412	770	2,888	30	97	50	95	6,150	6,492
Alberta.....1956	9,444	7,146	820	1,956	86	184	99	110	10,449	9,396
1964	8,600	6,203	750	3,090	80	246	85	146	9,515	9,685
1965	7,800	5,563	900	3,681	75	236	80	148	8,855	9,628
British Columbia...1956	4,221	4,978	354	1,032	14	41	24	37	4,613	6,088
1964	5,990	6,821	500	2,405	9	34	25	47	6,524	9,307
1965	6,200	6,459	525	2,678	8	31	25	52	6,758	9,220
<b>Totals.....1956</b>	<b>67,535</b>	<b>65,694</b>	<b>4,770</b>	<b>12,787</b>	<b>326</b>	<b>739</b>	<b>419</b>	<b>509</b>	<b>73,050</b>	<b>79,729</b>
1964	<b>68,625</b>	<b>62,715</b>	<b>6,531</b>	<b>29,849</b>	<b>293</b>	<b>976</b>	<b>381</b>	<b>709</b>	<b>75,830</b>	<b>94,249</b>
1965	<b>67,440</b>	<b>60,785</b>	<b>7,606</b>	<b>33,933</b>	<b>284</b>	<b>929</b>	<b>399</b>	<b>774</b>	<b>75,729</b>	<b>96,421</b>

**15.—Production and Domestic Disappearance of Poultry Meat, 1956, 1964 and 1965**

(Eviscerated weight)

Year and Item	Net Production	Total Supply	Domestic Disappearance	Per Capita Consumption
	'000 lb.	'000 lb.	'000 lb.	lb.
<b>1956</b>				
Fowl and chickens.....	308,912	329,742	308,203	19.2
Turkeys.....	89,968	112,216	96,441	6.0
Geese.....	2,702	2,803	2,678	0.2
Ducks.....	2,885	4,001	3,802	0.2
<b>Totals, 1956.....</b>	<b>404,467</b>	<b>448,762</b>	<b>411,124</b>	<b>25.6</b>
<b>1964</b>				
Fowl and chickens.....	483,349	508,811	489,478	25.4
Turkeys.....	162,448	188,563	166,584	8.6
Geese.....	3,020	3,219	2,974	0.2
Ducks.....	4,922	6,758	6,216	0.3
<b>Totals, 1964.....</b>	<b>653,739</b>	<b>707,351</b>	<b>665,252</b>	<b>34.5</b>
<b>1965</b>				
Fowl and chickens.....	502,547	529,325	510,512	26.0
Turkeys.....	186,299	211,640	186,645	9.5
Geese.....	3,133	3,287	3,038	0.2
Ducks.....	4,974	7,108	6,830	0.3
<b>Totals, 1965.....</b>	<b>696,953</b>	<b>751,360</b>	<b>707,025</b>	<b>36.0</b>

**Subsection 5.—Dairying**

The dairy industry occupies a prominent position in Canadian agriculture and is an important source of farm cash receipts. Although the size of the national dairy herd has been declining gradually, milk production declined in 1965 for the first time in six years.



There has been an over-all increase in output per cow as a result of the tendency to switch from low-producing breeds and from the following of improved livestock programs, especially through artificial insemination. Dairy herds have become fewer but larger. In 1951 about 12 p.c. of the cows were in herds of 13 or more but by 1961 the percentage had risen to 27. In Ontario and Quebec over 40 p.c. are now in this category. Increasing specialization and the change to larger herds often means better managed cows and more milk per cow.

Milk production is concentrated in Central Canada, Ontario and Quebec accounting for about 71 p.c. of the total quantity. Of the total output in 1965, 61.9 p.c. was used for factory-made dairy products, 28.6 p.c. was sold in fluid form and 9.5 p.c. was used for all purposes on farms. In recent years, fluid milk usage has risen slowly but has shown little change as a percentage of total milk production. Fluid sales, which include standard, homogenized, partly skimmed and skim milk, and a variety of creams, are being maintained by the increased demand for partly skimmed milk which has occurred as a result of a shift in emphasis from fat to non-fat constituents in milk.

### 16.—Production and Utilization of Milk, by Province, 1963-65

Province and Year	Milk Used in Manufacture		Milk Otherwise Used			Total Milk Production
	On Farms <sup>1</sup>	In Factories	Fluid Sales	Farm-Home Consumed	Fed on Farms	
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland.....	..	..	..	..	..	..
Prince Edward Island.....1963	1,381	160,275	22,245	19,600	10,649	214,150
1964	1,264	175,607	22,103	19,960	11,484	230,418
1965	889	181,490	21,817	19,750	9,581	233,527
Nova Scotia.....1963	6,037	102,992	196,933	25,700	16,424	348,086
1964	4,563	108,568	195,606	25,490	13,758	347,985
1965	3,229	109,173	197,929	25,080	11,437	346,848
New Brunswick.....1963	6,856	170,632	152,747	26,030	10,935	367,200
1964	5,148	172,387	151,232	24,720	10,025	363,512
1965	4,282	155,593	157,298	23,240	9,091	349,504
Quebec.....1963	13,361	4,303,259	1,425,466	238,000	256,380	6,236,466
1964	11,255	4,200,558	1,457,619	221,800	216,200	6,117,532
1965	7,699	4,175,387	1,491,038	214,900	212,040	6,101,064
Ontario.....1963	12,262	4,079,397	1,986,041	197,500	295,400	6,570,600
1964	9,360	4,256,662	2,029,426	197,000	302,800	6,795,248
1965	8,120	4,329,293	2,074,504	192,200	292,600	6,896,717
Manitoba.....1963	16,146	622,266	246,042	96,610	68,190	1,049,254
1964	11,349	594,132	248,718	92,220	64,150	1,010,569
1965	9,126	557,644	249,521	85,500	52,820	954,611
Saskatchewan.....1963	41,535	640,280	187,928	161,100	82,060	1,112,903
1964	34,936	602,413	191,283	156,300	82,530	1,057,462
1965	24,687	516,761	195,457	152,400	64,360	953,665
Alberta.....1963	40,716	1,056,409	347,229	154,300	93,500	1,692,154
1964	33,649	1,094,288	347,868	153,400	90,220	1,719,425
1965	26,653	1,015,921	361,377	142,900	94,370	1,641,221
British Columbia.....1963	4,493	320,702	457,244	24,780	33,950	841,169
1964	3,323	322,362	471,014	24,350	32,170	853,220
1965	2,948	296,975	493,001	23,360	28,450	844,734
<b>Totals.....1963</b>	<b>142,787</b>	<b>11,456,212</b>	<b>5,021,875</b>	<b>943,620</b>	<b>867,488</b>	<b>18,431,962</b>
<b>1964</b>	<b>114,847</b>	<b>11,526,978</b>	<b>5,114,869</b>	<b>925,240</b>	<b>823,437</b>	<b>18,505,371</b>
<b>1965</b>	<b>87,633</b>	<b>11,338,237</b>	<b>5,241,942</b>	<b>879,330</b>	<b>774,749</b>	<b>18,321,891</b>

<sup>1</sup> Used in farm butter only.

## 17.—Farm Values of Milk Production, by Province, 1963-65

Province and Year	Value of Milk Used in Manufacture		Value of Milk Otherwise Used			Value of Total Milk Production
	On Farms <sup>1</sup>	In Factories	Fluid Sales	Farm-Home Consumed	Fed on Farms <sup>2</sup>	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	..	..	..	..	..	..
Prince Edward Island.....1963	32	3,932	898	555	755	6,172
.....1964	29	4,356	917	577	872	6,751
.....1965	21	4,535	911	583	884	6,924
Nova Scotia.....1963	144	2,441	9,284	779	817	13,465
.....1964	111	2,612	9,710	777	721	13,931
.....1965	77	2,664	9,934	772	623	14,070
New Brunswick.....1963	173	4,040	6,996	778	848	12,835
.....1964	130	4,125	7,293	764	944	13,256
.....1965	110	3,777	7,626	723	826	13,062
Quebec.....1963	314	108,937	59,791	7,402	16,096	192,540
.....1964	260	113,212	62,832	7,626	14,939	198,869
.....1965	184	124,334	66,506	7,715	15,306	214,045
Ontario.....1963	299	104,378	89,062	5,925	15,195	214,859
.....1964	228	113,249	93,539	6,048	16,005	229,069
.....1965	198	118,645	96,466	6,266	17,760	239,335
Manitoba.....1963	393	13,922	10,050	2,502	3,863	20,730
.....1964	276	13,321	10,371	2,388	3,630	29,986
.....1965	226	12,610	10,643	2,300	3,692	29,471
Saskatchewan.....1963	994	14,304	8,234	4,285	4,888	32,705
.....1964	836	13,600	8,573	4,189	4,730	31,923
.....1965	591	11,704	9,159	4,100	3,864	29,418
Alberta.....1963	974	24,893	14,797	4,166	6,143	50,973
.....1964	805	26,135	15,279	4,249	6,518	52,986
.....1965	638	24,323	16,067	3,958	6,285	51,271
British Columbia.....1963	102	8,511	25,183	773	1,389	35,958
.....1964	77	8,670	26,000	762	1,314	36,823
.....1965	67	8,375	27,981	750	1,121	38,294
<b>Totals.....1963</b>	<b>3,425</b>	<b>285,358</b>	<b>224,295</b>	<b>27,165</b>	<b>49,994</b>	<b>590,237</b>
<b>.....1964</b>	<b>2,752</b>	<b>299,280</b>	<b>234,514</b>	<b>27,380</b>	<b>49,673</b>	<b>613,599</b>
<b>.....1965</b>	<b>2,112</b>	<b>310,967</b>	<b>245,293</b>	<b>27,167</b>	<b>50,361</b>	<b>635,900</b>

<sup>1</sup> Used in farm butter only.<sup>2</sup> Includes values of skim milk and buttermilk retained on farms.

Historically, butter was the residual product into which the summer milk was made for storage and use during the winter months. This still occurs, particularly in Prince Edward Island, Quebec and the Prairie Provinces where slightly over half the milk is made into butter.

In 1965, about 337,000,000 lb. of creamery butter and 4,000,000 lb. of farm butter were produced in Canada, accounting for 7,976,000,000 lb. of milk or about 44 p.c. of the national output. The demand for solids non-fat has encouraged farmers to ship increasing quantities of whole milk instead of farm-separated cream to the creameries. Whole milk used in butter manufacturing was estimated at 3,200,000,000 lb. in 1965, more than the amount used in all other manufactured dairy products. Consumption per capita of creamery butter was 18.18 lb. compared with 18.54 lb. in 1964.

During the past ten years, cheese production has gradually increased, particularly in Ontario and Quebec. These two provinces in 1965 accounted for 95.9 p.c. of the total output. In that year, some 172,900,000 lb. of cheese were produced, which represented about 1,898,000,000 lb. of milk or approximately 10 p.c. of the total milk production. Exports of all cheese, mostly cheddar, amounted to 32,055,000 lb. compared with 31,658,000 lb. in 1964. Most of the Canadian exports of cheddar traditionally originate in Ontario, which exports about 38 p.c. of its production.

### 18.—Production of Butter and Cheese, by Province, 1963-65

Province and Year	Butter				Cheese
	Creamery	Dairy	Whey	Total	Factory <sup>1</sup>
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland.....	..	..	..	..	..
Prince Edward Island.....1963	5,386	59	24	5,469	1,107
1964	5,726	54	34	5,814	1,614
1965	5,880	38	49	5,967	1,702
Nova Scotia.....1963	3,092	258	—	3,350	—
1964	3,012	195	—	3,207	—
1965	3,024	138	—	3,162	—
New Brunswick.....1963	6,451	293	—	6,744	559
1964	6,426	220	—	6,646	654
1965	5,697	183	—	5,880	610
Quebec.....1963	138,420	571	1,748	140,739	64,385
1964	133,474	481	1,860	135,815	67,008
1965	131,611	329	1,920	133,860	69,346
Ontario.....1963	103,242	524	2,600	106,366	84,984
1964	109,731	400	2,608	112,739	87,837
1965	107,664	347	2,678	110,689	96,441
Manitoba.....1963	24,901	690	—	25,591	817
1964	23,563	485	—	24,048	944
1965	21,806	390	—	22,196	1,145
Saskatchewan.....1963	26,921	1,775	—	28,696	—
1964	25,224	1,493	—	26,717	—
1965	21,700	1,055	—	22,755	—
Alberta.....1963	38,467	1,740	5	40,212	1,903
1964	39,818	1,438	5	41,261	2,579
1965	36,562	1,139	4	37,705	2,291
British Columbia.....1963	5,039	192	—	5,231	989
1964	4,768	142	—	4,910	1,058
1965	3,177	126	—	3,303	1,092
<b>Totals.....1963</b>	<b>351,919</b>	<b>6,102</b>	<b>4,377</b>	<b>362,398</b>	<b>154,987<sup>2</sup></b>
<b>1964</b>	<b>351,742</b>	<b>4,908</b>	<b>4,507</b>	<b>361,157</b>	<b>161,964<sup>2</sup></b>
<b>1965</b>	<b>337,121</b>	<b>3,745</b>	<b>4,651</b>	<b>345,517</b>	<b>172,908<sup>2</sup></b>

<sup>1</sup> Factory-made cheese includes cheddar and other cheese made from whole milk and cream.

<sup>2</sup> Amounts for "other cheese" are included in Quebec, Ontario and Alberta figures but, as fewer than three firms reported in the other provinces, data cannot be included except in the Canada total.

Concentrated milk products, which comprise a large group of both whole milk and skim milk products, are moving in opposite utilization trends. The amount of milk going into whole milk products—evaporated milk, dry whole milk, partly skimmed concentrated products, etc.—is decreasing; milk used for these products amounted to 984,000,000 lb.



in 1965, about 49,000,000 lb. less than in 1961. On the other hand, there is a rapidly expanding market for solids non-fat, in the form of dry skim milk and casein; in the period 1958-65, the quantity of whole milk from which these two products were made rose by 1,300,000,000 lb. to 3,700,000,000 lb. Casein production is concentrated in Quebec, about 93 p.c. of the national total originating in that province.

The importance of international trade in this sector of the industry is evident from the fact that of every 10 lb. of whole milk powder produced in Canada, nine are exported; of every 10 lb. of casein produced, seven are sold abroad; and of every 10 lb. of skim milk powder produced, four are exported. In normal years, export values of dairy products are three times as large as import values.

### 19.—Production of Concentrated Milk Products, 1961-65

(Exclusive of Newfoundland)

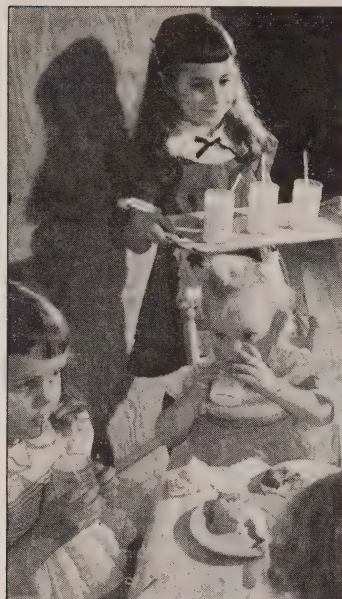
Product	1961	1962	1963	1964	1965
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
<b>Concentrated Whole Milk Products</b> .....	<b>393,805</b>	<b>363,566</b>	<b>383,675</b>	<b>384,942</b>	<b>377,268</b>
Condensed milk.....	14,814	16,313	17,475	17,621	19,251
Evaporated milk.....	324,049	292,606	313,086	314,705	310,136
Whole milk powder.....	25,622	23,310	21,907	22,330	21,947
Partly skimmed evaporated milk.....	20,419	19,024	18,108	18,250	15,136
Other whole milk products <sup>1</sup> .....	8,901	12,313	13,099	12,036	10,798
<b>Concentrated Milk By-products</b> .....	<b>269,244</b>	<b>259,470</b>	<b>259,759</b>	<b>292,547</b>	<b>330,624</b>
Condensed skim milk.....	1,918	1,816	1,346	1,060	1,232
Evaporated skim milk.....	6,210	5,335	7,073	7,382	7,494
Skim milk powder.....	213,029	192,292	176,086	203,047	222,157
Powdered buttermilk.....	9,833	10,323	10,149	9,740	9,141
Whey powder.....	19,730	18,221	30,051	32,971	41,298
Casein.....	14,024	22,197	21,426	20,150	23,153
Other milk by-products <sup>2</sup> .....	4,500	9,286	13,628	18,197	26,049
<b>Totals</b> .....	<b>663,049</b>	<b>623,036</b>	<b>643,434</b>	<b>677,489</b>	<b>707,892</b>

<sup>1</sup> Includes malted milk, cream powder, formula milks, whole milk powder of less than 26-p.c. fat, evaporated milk of 2-p.c. fat and concentrated liquid milk manufactured by fewer than three firms. <sup>2</sup> Includes sugar of milk (lactose), condensed buttermilk, concentrated liquid skim milk lactalbumin and special formula skim milk products manufactured by fewer than three firms.

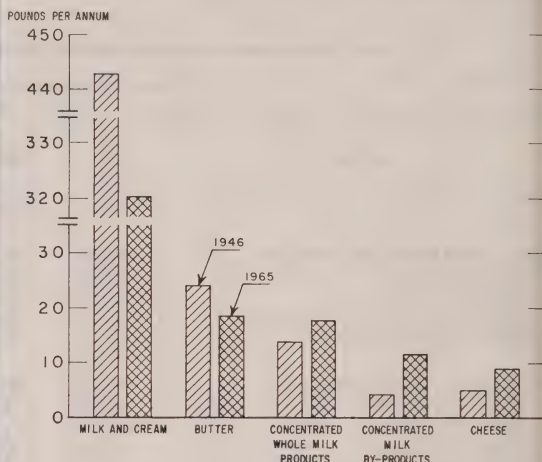
### 20.—Production of Ice Cream Mix, by Province, 1963-65

Province	1963	1964	1965	Province	1963	1964	1965
	'000 gal.	'000 gal.	'000 gal.		'000 gal.	'000 gal.	'000 gal.
Newfoundland.....	..	..	..	Manitoba.....	1,389	1,503	1,505
Prince Edward Island..	153	151	165	Saskatchewan.....	1,313	1,357	1,188
Nova Scotia.....	937	1,030	1,140	Alberta.....	2,217	2,259	2,595
New Brunswick.....	617	659	722	British Columbia.....	2,576	2,636	2,908
Quebec.....	5,673	6,452	6,684	<b>Totals</b> .....	<b>23,476</b>	<b>24,684</b>	<b>25,657</b>
Ontario.....	8,601	8,637	8,750				

The estimated consumption of fluid milk and cream, on a milk basis, amounted to 4,745,166,000 pt. in 1965, which was 62,912,000 pt. higher than the 1964 estimate. Daily average consumption per capita amounted to 0.68 pt., unchanged from the previous year. The estimated consumption of milk and cream is given by province in Table 21 and the domestic disappearance of all dairy products in Table 22.



PER CAPITA CONSUMPTION OF DAIRY PRODUCTS,  
1946 AND 1965



21.—Estimated Consumption of Milk and Cream (expressed as Milk), by Province, 1963-65

Province and Year	Estimated Consumption	Daily per Capita Consumption	Province and Year	Estimated Consumption	Daily per Capita Consumption
	'000 pt.	pt.		'000 pt.	pt.
Newfoundland.....	..	..	Manitoba.....1963	265,621	0.77
Prince Edward Island....1963	32,438	0.83	1964	264,293	0.75
1964	32,607	0.83	1965	259,706	0.74
1965	32,222	0.82	Saskatchewan.....1963	270,565	0.79
Nova Scotia.....1963	172,583	0.62	1964	269,444	0.78
1964	171,393	0.62	1965	269,656	0.78
1965	172,875	0.62	Alberta.....1963	388,782	0.76
New Brunswick.....1963	138,587	0.62	1964	388,579	0.74
1964	136,397	0.60	1965	390,912	0.74
1965	139,951	0.61	British Columbia.....1963	373,662	0.60
Quebec.....1963	1,289,508	0.65	1964	384,003	0.60
1964	1,309,627	0.64	1965	400,280	0.61
1965	1,322,431	0.64			
Ontario.....1963	1,692,667	0.72	<b>Totals.....1963</b>	<b>4,624,413</b>	<b>0.69</b>
1964	1,725,911	0.71	<b>1964</b>	<b>4,682,251</b>	<b>0.68</b>
1965	1,757,133	0.71	<b>1965</b>	<b>4,745,166</b>	<b>0.68</b>

## 22.—Domestic Disappearance of Dairy Products, 1963-65

Product	1963		1964		1965	
	Total	Per Capita <sup>1</sup>	Total	Per Capita <sup>1</sup>	Total	Per Capita <sup>1</sup>
	'000 lb.	lb.	'000 lb.	lb.	'000 lb.	lb.
<b>Milk and Cream</b> .....	<b>5,965,495</b>	<b>323.40</b>	<b>6,040,109</b>	<b>321.62</b>	<b>6,121,272</b>	<b>320.38</b>
Milk.....	5,041,738	273.32	5,109,689	272.08	5,188,953	271.59
Cream as milk.....	923,757	50.08	930,420	49.54	932,319	48.79
Cream as product.....	193,389	10.48	197,132	10.50	199,527	10.44
<b>Butter</b> .....	<b>361,790</b>	<b>19.11</b>	<b>366,781</b>	<b>19.03</b>	<b>364,762</b>	<b>18.61</b>
Creamery.....	351,342	18.56	357,323	18.54	356,455	18.18
Dairy.....	6,102	0.32	4,908	0.25	3,745	0.19
Whey.....	4,246	0.22	4,550	0.24	4,562	0.24
<b>Cheese</b> .....	<b>157,149</b>	<b>8.30</b>	<b>166,566</b>	<b>8.64</b>	<b>176,926</b>	<b>9.02</b>
Cheddar.....	61,578	3.25	65,625	3.40	65,120	3.32
Process.....	64,638	3.42	68,824	3.57	75,303	3.84
Other.....	30,933	1.63	32,117	1.67	36,503	1.86
<b>Concentrated Whole Milk Products<sup>2</sup></b> .....	<b>361,245</b>	<b>19.09</b>	<b>353,091</b>	<b>18.32</b>	<b>349,164</b>	<b>17.81</b>
Evaporated.....	305,472	16.19	302,546	15.70	299,633	15.28
Condensed.....	17,935	0.95	17,587	0.91	19,139	0.98
Powdered.....	5,167	0.27	2,976	0.15	3,795	0.19
<b>Concentrated Milk By-products<sup>3</sup></b> .....	<b>223,059</b>	<b>11.78</b>	<b>229,862</b>	<b>11.93</b>	<b>229,242</b>	<b>11.69</b>
Evaporated.....	7,063	0.37	7,348	0.38	7,553	0.39
Condensed.....	1,357	0.07	1,052	0.05	1,233	0.06
Powdered.....	153,049	8.09	153,406	7.96	139,415	7.11
<b>All Dairy Products in Terms of Milk—</b>						
Butter.....	8,364,190	441.90	8,476,205	439.84	8,428,680	429.95
Cheese.....	1,534,818	81.09	1,626,761	84.41	1,720,476	87.76
Concentrated.....	848,138	44.81	819,240	42.51	817,195	41.69
<b>Grand Totals<sup>4</sup></b> .....	<b>17,211,937</b>	<b>917.58</b>	<b>17,452,232</b>	<b>913.80</b>	<b>17,624,815</b>	<b>907.18</b>

<sup>1</sup> Includes Newfoundland for all manufactured dairy products.<sup>2</sup> Includes, in addition to the items listed,

malted milk, cream powder, partly skimmed evaporated milk, whole milk powder of less than 26-p.c. fat, formula milks, evaporated milk of 2-p.c. fat, and concentrated liquid milk.

<sup>3</sup> Includes milk by-product items not listed, i.e., condensed buttermilk, powdered buttermilk, sugar of milk, casein, powdered whey, special formula skim milk products, lactalbumin and concentrated liquid skim milk. Since the quantities used for human consumption and livestock feeding cannot be separated, per capita figures include both.<sup>4</sup> Includes ice cream

mix in terms of milk.

## Subsection 6.—Fruits, Vegetables and Other Farm Products

**Fruits.**—Commercial fruit growing in Canada is confined almost exclusively to rather limited areas in the Provinces of Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia. Nova Scotia production is centred mainly in the Annapolis Valley and New Brunswick production in the St. John River Valley and Westmorland County. The fruit growing districts of Quebec are the Montreal area, the North Shore area, the Eastern Townships and the Quebec City district. Ontario fruit is grown in all the counties adjacent to the St. Lawrence River and the Great Lakes as far west as Georgian Bay, the Niagara district being the most productive. In British Columbia the four well-defined fruit areas are the Okanagan Valley, the Fraser Valley, the Kootenay and Arrow Lakes district and Vancouver Island. The climate elsewhere in Canada is not generally suitable for commercial tree-fruit culture. In most producing areas, particularly in the Annapolis Valley of Nova Scotia, the Niagara Peninsula of Ontario and the Okanagan Valley of British Columbia, fruit growing is either the principal or one of the most important forms of agriculture and is very important to the economy of those areas. Apples and small fruits are produced commercially in the provinces named but tender tree fruits and commercial vineyards are limited largely to Ontario and British Columbia.



Strawberries are grown commercially in all provinces for which tree-fruit statistics are prepared, as well as in Prince Edward Island. However, this crop is produced over a somewhat wider area than are tree fruits. In Nova Scotia, for example, considerable quantities of strawberries are grown in Colchester County and farther north, as well as in the apple producing areas of the Annapolis Valley. In British Columbia most of the strawberries are grown in the Fraser Valley.

Raspberries are grown commercially in Nova Scotia, New Brunswick and Quebec but the bulk of the crop is produced in Ontario and British Columbia. The Fraser Valley of British Columbia is the most important producing area.

Wild blueberries are harvested on a commercial scale in Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick and Quebec. This crop is indigenous to certain areas in these provinces and a large percentage of the crop is frozen and exported. There is also some production of cultivated blueberries, particularly in British Columbia.

A marketing system has been developed for distributing fresh fruit from the specialized production areas to all parts of the country and a large proportion of the deciduous fruit consumed in Canada is grown domestically. Considerable quantities of apples, strawberries and blueberries are exported.

Tables 23 and 24 show the estimated commercial production of fruit, by kind, for the years 1963-65 and by province for 1958-65.

### 23.—Estimated Commercial Production and Farm Value of Fruit, 1963-65

Kind of Fruit and Year	Quantity	Weight	Farm Value	Kind of Fruit and Year	Quantity	Weight	Farm Value
	'000 bu.	'000 lb.	\$'000		'000 bu.	'000 lb.	\$'000
Apples—				Plums and Prunes—			
1963.....	23,036	1,036,620	31,028	1963.....	700	35,000	1,434
1964.....	20,052	902,340	31,598	1964.....	668	33,400	1,171
1965.....	22,316	1,004,220	31,007	1965.....	505	25,250	1,209
Apricots—				Raspberries—	'000 qt.		
1963.....	99	4,950	327	1963.....	12,664	18,018	3,906
1964.....	387	19,350	754	1964.....	13,765	19,750	3,854
1965.....	2	100	13	1965.....	13,680	19,688	4,173
Cherries (sour)—				Strawberries—			
1963.....	346	17,300	1,716	1963.....	24,166	32,223	5,860
1964.....	604	30,200	2,003	1964.....	30,866	41,464	7,939
1965.....	444	22,200	1,621	1965.....	18,287	23,810	5,844
Cherries (sweet)—				Loganberries—	'000 lb.		
1963.....	406	20,300	3,143	1963.....	1,461	1,461	231
1964.....	558	27,900	4,603	1964.....	1,078	1,078	173
1965.....	242	12,100	2,018	1965.....	991	991	168
Peaches—				Grapes—			
1963.....	2,373	118,650	6,933	1963.....	106,760	106,760	5,739
1964.....	2,862	143,100	8,128	1964.....	119,595	119,595	6,015
1965.....	1,606	80,300	5,532	1965.....	126,012	126,012	5,440
Pears—				Blueberries—			
1963.....	1,688	84,400	3,999	1963.....	23,954	23,954	2,795
1964.....	1,999	99,950	3,942	1964.....	20,861	20,861	3,603
1965.....	1,065	53,250	2,661	1965.....	18,145	18,145	4,452

**24.—Value of Commercial Fruit Produced, by Province, 1963-65, with Average for 1958-62**

(Farm value for unpacked fruit)

Province	Average 1958-62	1963	1964	1965
	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	148	105	83	680
Prince Edward Island.....	331	357	393	392
Nova Scotia.....	2,990	4,017	3,903	5,360
New Brunswick.....	1,234	1,425	1,514	1,573
Quebec.....	7,161	11,009	11,023	9,351
Ontario.....	22,247	27,195	31,990	28,421
British Columbia.....	16,702	23,170	25,048	18,602
<b>Totals.....</b>	<b>50,813</b>	<b>67,278</b>	<b>73,954</b>	<b>64,379</b>

**Vegetables.**—Estimates of acreage and production of commercial vegetables in Canada are prepared for all provinces except Newfoundland and Saskatchewan; only partial estimates were prepared for Prince Edward Island until 1965. Ontario is the largest producer, followed by Quebec and British Columbia. A wide variety of crops is grown in these three provinces and a somewhat smaller range in the Maritimes and in the Prairie Provinces.

Canning, freezing and processing of vegetables are carried on in the important producing areas. The estimates in the following tables cover output of commercial growers for processing and for sale on the fresh market but do not include acreages or production of vegetables grown for home use on farms or elsewhere.

**25.—Estimated Commercial Acreage of Vegetables, by Province, 1963-65 with Average for 1958-62**

Province	Av. 1958-62	1963	1964	1965
	acres	acres	acres	acres
Prince Edward Island.....	..	..	..	210
Nova Scotia <sup>1</sup> .....	3,300	4,540	5,170	4,330
New Brunswick <sup>1</sup> .....	4,750	7,620	10,380	9,040
Quebec.....	65,280	75,440	83,170	75,530
Ontario.....	104,980	103,360	115,470	116,510
Manitoba <sup>2</sup> .....	3,570	3,780	3,820	4,010
Alberta <sup>2</sup> .....	15,070	15,520	16,000	13,010
British Columbia.....	15,680	14,250	13,490	17,390
<b>Totals.....</b>	<b>212,630</b>	<b>224,520</b>	<b>247,500</b>	<b>240,030</b>

<sup>1</sup> Prior to 1960, acreages of peas in Prince Edward Island and New Brunswick are included with Nova Scotia; in 1960, 1961, 1962 and 1963, Prince Edward Island and Nova Scotia acreages of peas are included with New Brunswick.

<sup>2</sup> Acreages of beans, corn and peas in Manitoba are included with Alberta.

**26.—Estimated Commercial Acreage and Production of Vegetables, 1963-65  
with Average for 1958-62**

Vegetable	Av. 1958-62		1963		1964		1965	
	Area	Production	Area	Production	Area	Production	Area	Production
	acres	'000 lb.	acres	'000 lb.	acres	'000 lb.	acres	'000 lb.
Asparagus.....	3,840	7,265	4,180	6,540	4,030	5,775	3,820	5,866
Beans.....	12,700	50,277	23,040	79,373	28,020	98,406	23,000	95,999
Beets.....	3,010	51,144	2,780	51,601	3,220	57,104	2,710	44,750
Cabbage <sup>1</sup> .....	6,900	130,335	7,130	147,908	7,420	136,635	7,350	143,365
Carrots <sup>1</sup> .....	12,060	277,869	13,710	344,824	14,270	351,427	15,440	300,627
Cauliflower <sup>1</sup> .....	2,760	29,084	3,110	26,640	3,150	33,770	3,320	37,490
Celery.....	1,310	43,135	1,200	44,918	1,110	40,504	1,050	42,832
Corn <sup>1</sup> .....	55,120	348,215	50,550	324,556	52,180	389,417	53,900	402,753
Lettuce.....	5,510	64,862	4,790	54,071	4,990	57,067	5,140	57,455
Onions.....	7,660	162,434	9,850	256,854	9,590	215,722	10,300	288,966
Parsnips.....	720	11,984	690	13,027	580	9,554	680	13,779
Peas <sup>2</sup> .....	45,020	100,346	52,190	113,858	61,280	138,328	55,310	163,585
Spinach.....	1,140	12,162	1,120	11,033	1,090	12,642	1,070	11,457
Tomatoes.....	29,560	814,340	31,070	695,393	34,360	772,748	34,730	899,157

<sup>1</sup> Includes Prince Edward Island for 1965.

<sup>2</sup> Estimates apply only to that portion of the crop grown for processing in all provinces for which estimates are made except British Columbia.

**Tobacco.**—Canada produces several types of leaf tobacco but by far the most important is the flue-cured or Bright Virginia type. This is grown mainly in Ontario, along with considerable quantities of burley and smaller amounts of dark (air-cured and fire-cured) tobacco. Quebec produces smaller quantities of these types as well as some cigar and pipe tobacco and small flue-cured acreages are also harvested in Prince Edward Island, Nova Scotia and New Brunswick. In 1965, increased plantings of flue-cured tobacco in Ontario from 73,479 acres to 86,870 acres was the principal reason for the production of a slightly larger total crop than in 1964; the crop increased in volume approximately 18,000,000 lb. to slightly over 154,000,000 lb.

A study of Department of National Revenue reports on tax-paid withdrawals of tobacco products reveals changes in the smoking habits of Canadians during the past three decades. In 1922, the first year for which comparable figures are available, Canadian annual per capita consumption of cigarettes was 229; by 1959 the annual per capita consumption (calculated on the basis of total population) had increased to 1,939, by 1964 to 2,113 and by 1965 to 2,198.

**27.—Acreage, Production and Value of the Commercial Crop of Leaf Tobacco,  
by Province, 1961-65**

Year	Quebec			Ontario			Other Provinces		
	Har-vested Area	Pro-duction	Value	Har-vested Area	Pro-duction	Value	Har-vested Area	Pro-duction	Value
	acres	'000 lb.	\$	acres	'000 lb.	\$	acres	'000 lb.	\$
1961.....	11,081	11,900	4,156,000	126,718	197,664	101,059,000	118	157	80,000
1962.....	8,901	12,388	4,582,000	121,640	190,265	91,165,000	515	374	157,000
1963.....	8,933	10,776	4,046,000	104,178	189,719	86,279,000	782	649	308,000
1964.....	8,334	9,919	4,299,000	76,267	142,738	78,390,000	715	757	429,000
1965.....	9,348	9,272	3,961,000	89,220	158,810	101,765,000	776	798	472,000



**28.—Acreage, Production and Value of the Commercial Crop of Leaf Tobacco,  
by Main Type, 1961-65**

Type of Tobacco and Year	Harvested Area	Average Yield per Acre	Total Production	Average Farm Price per lb.	Gross Farm Value
	acres	lb.	lb.	cts.	\$
Flue-cured.....1961	127,844	1,529	195,441,000	51.6	100,870,000
.....1962	122,405	1,533	187,621,000	48.3	90,576,000
.....1963	105,814	1,764	186,648,000	45.9	85,706,000
.....1964	79,639	1,798	143,197,000	55.6	79,633,000
.....1965	93,523	1,702	159,185,000	64.6	102,816,000
Burley.....1961	3,681	1,770	6,516,000	37.2	2,426,000
.....1962	4,569	1,952	8,918,000	40.4	3,604,000
.....1963	4,241	3,844	8,808,000	34.1	3,471,000
.....1964	2,398	3,638	5,317,000	30.7	2,052,000
.....1965	1,939	2,054	3,982,000	44.7	1,780,000
Cigar leaf.....1961	4,418	1,264	5,584,000	25.0	1,397,000
.....1962	3,055	1,716	5,242,000	25.0	1,311,000
.....1963	2,567	1,625	4,171,000	24.0	1,002,000
.....1964	2,318	1,500	3,477,000	26.0	904,000
.....1965	3,108	1,461	4,540,000	25.3	1,147,000
<b>Totals<sup>1</sup>.....1961</b>	<b>137,917</b>	<b>1,521</b>	<b>209,721,000</b>	<b>50.2</b>	<b>105,295,000</b>
<b>.....1962</b>	<b>131,056</b>	<b>1,548</b>	<b>203,027,000</b>	<b>47.2</b>	<b>95,904,000</b>
<b>.....1963</b>	<b>113,893</b>	<b>1,766</b>	<b>201,144,000</b>	<b>45.1</b>	<b>90,633,000</b>
<b>.....1964</b>	<b>85,316</b>	<b>1,798</b>	<b>153,414,000</b>	<b>54.2</b>	<b>83,118,000</b>
<b>.....1965</b>	<b>99,344</b>	<b>1,700</b>	<b>168,880,000</b>	<b>62.9</b>	<b>106,198,000</b>

<sup>1</sup> Includes other types not specified.

**Eggs.**—Egg production in 1965 at 432,795,000 doz. was 1.2 p.c. lower than the output of 1964 and 3.4 p.c. lower than the record production in 1959, which amounted to 448,200,000 doz. The number of layers decreased slightly and the rate of lay per 100 layers dropped to 20,012 from 20,095. The farm selling price of eggs averaged 36.3 cents per doz. compared with 32.7 cents in 1964 so that, despite the lower production, there was an increase in total value of eggs produced. The three Maritime Provinces produced 7.3 p.c. of all eggs in 1965; Quebec, 17.8 p.c.; Ontario, 39.4 p.c.; the Prairies, 24.2 p.c.; and British Columbia, 11.3 p.c.

**29.—Production, Utilization and Value of Farm Eggs, by Province, 1964 and 1965**

Province	1964				1965			
	Average Number of Layers	Average Production per 100 Layers	Net Eggs Laid <sup>1</sup>	Total Value (Sold and Used)	Average Number of Layers	Average Production per 100 Layers	Net Eggs Laid <sup>1</sup>	Total Value (Sold and Used)
	'000	No.	'000 doz.	\$'000	'000	No.	'000 doz.	\$'000
Prince Edward Island.....	257	19,289	4,079	1,357	262	18,205	3,944	1,341
Nova Scotia.....	1,027	21,615	18,278	6,217	1,037	21,555	18,450	7,424
New Brunswick.....	586	20,114	9,713	4,090	563	19,795	9,189	4,092
Quebec.....	4,378	19,790	71,520	26,684	4,563	20,407	77,013	31,078
Ontario.....	10,220	20,928	177,023	58,779	10,018	20,558	170,701	62,307
Manitoba.....	2,658	19,570	42,878	11,564	2,623	19,615	42,584	13,036
Saskatchewan.....	1,939	17,607	28,089	7,746	1,753	17,551	25,379	7,682
Alberta.....	2,589	18,170	38,574	10,748	2,493	17,837	36,654	11,765
British Columbia.....	2,745	21,025	47,752	15,934	2,835	20,829	48,881	18,220
<b>Totals.....</b>	<b>26,399</b>	<b>20,095</b>	<b>437,906</b>	<b>143,119</b>	<b>26,147</b>	<b>20,012</b>	<b>432,795</b>	<b>156,945</b>

<sup>1</sup> Total laid less loss.

**Wool.**—Canada produces only about one tenth of her total wool requirements; imports in 1965 were 65,222,000 lb., about 5 p.c. more than in 1964. Exports were 4,236,000 lb. compared with 3,223,000 lb. in 1964. The apparent domestic consumption of wool shown in Table 30 is determined on the basis of production, exports and imports but does not take into consideration changes in stocks for which the data are not available. Differences in wool utilization from year to year are therefore probably less marked than is indicated by these figures.

**30.—Production and Apparent Consumption of Wool, 1961-65**

Item	1961	1962	1963	1964	1965
Shorn Wool Produced—					
Yield per fleece..... lb.	7.8	8.0	7.9	8.0	7.8
Total yield..... '000 lb.	6,169	5,808	5,259	5,065	4,646
Price per pound <sup>1</sup> ..... cts.	50.2	49.3	51.9	51.5	47.3
Total value..... \$'000	3,094	2,862	2,728	2,611	2,196
Pulled Wool Produced..... '000 lb.	1,287	1,361	1,553	1,281	1,162
Totals, Wool Production..... '000 lb.	7,456	7,169	6,812	6,346	5,808
Apparent wool consumption <sup>2</sup> ..... '000 lb.	56,819	57,505	61,956	64,977	66,794

<sup>1</sup> Includes Agricultural Stabilization Act payments of 22 cents per lb. in 1961, 18.26 cents per lb. in 1962, 14.3 cents per lb. in 1963, 12.3 cents per lb. in 1964 and 16.3 cents per lb. in 1965 on qualifying graded wool. <sup>2</sup> See text above.

**Honey.**—As shown in Table 31, honey production was 34 p.c. higher in 1965 than in 1964 and established an all-time record for Canada. The number of colonies and the average yield per colony were both higher than in 1964.

Honey is produced commercially in all provinces except Newfoundland and yields tend to vary considerably from year to year. In 1965, Alberta was the largest producer, surpassing Ontario which had the highest production in 1964. Honey bees are kept in some of the fruit growing districts for purposes of pollination and are also used for the pollination of certain seed crops.

To facilitate storage, shipment and uniformity of quality, large quantities of Canadian honey are pasteurized. Beekeepers' marketing co-operatives are active in several provinces. In 1965, 7,900,000 lb. of honey valued at \$2,070,000 were exported from Canada, the main countries of destination being Britain, West Germany, Belgium and Luxembourg, Norway, Japan and the United States.

**31.—Honey and Beeswax Production 1963-65, with Average for 1958-62**

Item	Av. 1958-62	1963	1964	1965
Honey—				
Total production..... '000 lb.	31,407	42,142	36,662	49,157
Average production per colony..... lb.	94	117	96	119
Total value..... \$'000	5,245	7,538	6,655	8,665
Beeswax—				
Production..... '000 lb.	464	624	544	733
Value..... \$'000	212	282	252	340
<b>Total Value, Honey and Beeswax..... \$'000</b>	<b>5,457</b>	<b>7,820</b>	<b>6,907</b>	<b>9,005</b>
Beekeepers..... No.	12,836	10,660	10,760	10,350
Bee colonies..... "	332,624	360,060	382,240	413,030

**32.—Honey Production, by Province, 1963-65, with Average for 1958-62**

Province	Av. 1958-62	1963	1964	1965
	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Prince Edward Island.....	57	64	54	56
Nova Scotia.....	177	213	197	303
New Brunswick.....	80	125	97	86
Quebec.....	2,951	4,125	2,592	2,392
Ontario.....	9,423	11,000	11,000	9,800
Manitoba.....	5,776	7,285	5,822	5,930
Saskatchewan.....	3,847	6,100	5,500	6,300
Alberta.....	7,342	11,600	9,800	20,050
British Columbia.....	1,754	1,630	1,600	4,240
<b>Totals.....</b>	<b>31,407</b>	<b>42,142</b>	<b>36,662</b>	<b>49,157</b>

**Sugar Beets and Beet Sugar.**—Sugar beets are grown commercially in Quebec, Ontario, Manitoba and Alberta and beet sugar factories are located in these provinces. In Quebec, commercial production is centred in the St. Hilaire area of the Eastern Townships; in Ontario, production is confined to the southwestern section of the province. Alberta produces the largest crop and in that province sugar beets are grown under irrigation.

**33.—Acreage, Yield and Value of Sugar Beets and Quantity and Value of Beet Sugar Shipments, 1961-65**

Year	Sugar Beets					Beet Sugar (All Types)	
	Har- vested Area	Yield per Acre	Total Yield	Average Price per Ton	Total Value	Shipments	Value
	acres	tons	tons	\$	\$'000	'000 lb.	\$'000
1961.....	84,927	13.02	1,105,708	13.13	14,515	283,675	21,535
1962.....	84,677	13.06	1,105,704	19.00	21,004	284,236	20,791
1963.....	95,223	13.50	1,285,747	18.34	23,586	290,288	33,198
1964.....	101,312	12.81	1,297,912	14.71	19,091	307,652	37,033
1965.....	85,023	13.44	1,142,341	..	..	327,288	23,626

**Maple Sugar and Maple Syrup.**—Maple syrup is produced in the Provinces of Nova Scotia, New Brunswick, Quebec and Ontario. The bulk of the crop comes from the Eastern Townships of Quebec, a district famous both in Canada and in the United States as the centre of the maple products industry. Virtually all of the maple products exported are sent to the United States with the larger proportion moving as sugar, although substantial quantities of syrup are also shipped. Much of the syrup sold in Canada is marketed in one-gallon cans direct to the consumer from the producer but a considerable amount of both sugar and syrup is sold each year to processing firms.



### 34.—Production of Maple Sugar and Maple Syrup, by Province, 1963-65, with Average for 1958-62

Province and Year	Maple Sugar		Maple Syrup			Total Value, Sugar and Syrup
	Quantity	Value	Quantity	Average Price per gal.	Value	
	lb.	\$	gal.	\$	\$	\$
<b>Nova Scotia—</b>						
Av. 1958-62.....	13,000	8,000	4,000	5.75	23,000	31,000
1963.....	10,900	7,000	3,600	5.56	20,000	27,000
1964.....	1,500	1,000	1,400	5.71	8,000	9,000
1965.....	8,380	6,000	3,240	6.17	20,000	26,000
<b>New Brunswick—</b>						
Av. 1958-62.....	50,000	31,000	10,000	5.30	53,000	84,000
1963.....	32,000	21,000	7,800	5.38	42,000	63,000
1964.....	11,150	8,000	4,600	5.87	27,000	35,000
1965.....	40,180	32,000	12,000	6.33	76,000	108,000
<b>Quebec—</b>						
Av. 1958-62.....	561,000	257,000	2,169,000	3.67	7,963,000	8,220,000
1963.....	669,000	361,000	2,488,000	3.94	9,803,000	10,164,000
1964.....	457,000	256,000	1,561,000	4.13	6,447,000	6,703,000
1965.....	436,000	244,000	1,957,000	4.15	8,122,000	8,366,000
<b>Ontario—</b>						
Av. 1958-62.....	19,000	12,000	278,000	5.02	1,396,000	1,408,000
1963.....	7,800	6,000	219,000	5.21	1,141,000	1,147,000
1964.....	7,960	6,000	155,000	5.40	837,000	843,000
1965.....	9,920	8,000	187,000	5.60	1,047,000	1,055,000
<b>Totals—</b>						
Av. 1958-62.....	643,000	308,000	2,461,000	3.83	9,435,000	9,743,000
1963.....	719,700	395,000	2,718,400	4.05	11,006,000	11,401,000
1964.....	477,610	271,000	1,722,000	4.25	7,319,000	7,590,000
1965.....	494,480	290,000	2,159,240	4.29	9,265,000	9,555,000

**Nursery Stock.**—Statistics concerning the nursery industry in Canada for recent years are presented in Tables 35 and 36. All nurseries were asked to report quantities sold of stock propagated during these years; stock purchased from other nurseries in Canada was excluded to prevent duplication. A total of 234 nurseries reported shipments in 1964. Wholesale value of nursery stock shipments of fruit trees, etc., amounted to \$683,619 compared with \$581,059 in the previous year, and shipments of ornamental species to \$4,886,103 compared with \$4,225,891.

### 35.—Nursery Stock Shipments (Domestic), by Type, 1960-64

Classification	1960	1961	1962	1963	1964
	No.	No.	No.	No.	No.
<b>Fruit Trees, etc.—</b>					
Apple species.....	300,729	378,093	315,528	259,736	303,627
Tender tree-fruit species.....	258,185	284,197	235,468	304,880	242,545
Small fruit species.....	5,361,022	5,502,671	4,753,971	4,801,390	5,188,499
Other species.....	219,527	338,375	239,040	239,237	218,030
<b>Ornamental Species—</b>					
Rose bushes.....	2,001,121	1,444,440	1,399,399	1,566,679	1,416,481
Other ornamental shrubs and deciduous trees.....	4,908,373	4,343,288	4,595,962	3,998,417	8,401,969
Evergreen trees.....	1,292,029	1,759,369	1,377,015	1,488,811	1,527,724
Ornamental climbers.....	44,418	213,629	53,387	60,289	69,571
Hybrid teas on standards (roses)...	6,167	29,009	6,124	25,394	8,063

## 36.—Acreage of Nursery Stock, by Province, 1962-64

Province	1962		1963		1964	
	Fruit Species	Ornamental Species	Fruit Species	Ornamental Species	Fruit Species	Ornamental Species
	acres	acres	acres	acres	acres	acres
Quebec <sup>1</sup> .....	34	264	24	322	2,207	308
Ontario.....	364	2,583	2,311	2,526	457	2,949
Prairie Provinces.....	95	508	77	545	68	759
British Columbia.....	108	218	70	1,531	63	211
<b>Totals.....</b>	<b>601</b>	<b>3,573</b>	<b>2,482</b>	<b>4,924</b>	<b>2,895</b>	<b>4,227</b>

<sup>1</sup> Includes the Maritime Provinces for which insufficient information was reported.

**Greenhouse Operations.**—Annual surveys are made of greenhouse operations. Resulting figures are based on data reported by firms and individuals returning questionnaires, with the exception of that for cucumbers and tomatoes grown in Essex County of Ontario (the most important producing area), which are based on information obtained from the local co-operative marketing agency. Only greenhouses used for the production of items for sale are included in the survey.

## 37.—Greenhouse Operations, by Province, 1964, with Totals for 1960-64

Province	Firms Reporting	Area			Value of Sales (Wholesale)			
		Under Glass	Under Cloth	Open Field	Cut Flowers and Potted Plants	Vegetables	Plants—Rooted Cuttings, etc., for Growing On	Total Sales
	No.	sq. ft.	sq. ft.	acres	\$	\$	\$	\$
Nfld.....	5	25,120	—	1.5	50,593	1,590	17,435	69,618
P.E.I.....	53	864,949	1,040	8.1	924,972	291,919	56,736	1,273,627
N.S.....	25	217,857	750	11.5	357,302	<sup>1</sup>	35,174	392,476
N.B.....	101	1,221,549	15,600	61.9	2,089,167	51,717	242,381	2,383,265
Que.....	597	15,661,196	422,225	385.6	10,982,225	6,072,138	2,791,300	19,845,663
Ont.....	22	170,390	13,300	10.3	150,826	<sup>2</sup>	89,487	240,313
Man.....	14	226,458	12,000	24.2	191,684	12,936	88,752	293,372
Sask.....	44	1,757,960	160	36.0	1,545,092	131,062	297,291	1,973,445
Alta.....	265	3,880,800	3,189	277.0	3,277,279	1,153,950	605,757	5,036,986
B.C.....								
<b>Totals, 1964.....</b>	<b>1,126</b>	<b>24,026,279<sup>3</sup></b>	<b>468,264</b>	<b>816.1</b>	<b>19,569,140</b>	<b>7,715,312</b>	<b>4,224,313</b>	<b>31,508,765<sup>3</sup></b>
1963.....	1,195	23,735,418 <sup>3</sup>	437,671	807.8	17,951,072	6,818,638	3,494,638	28,264,124 <sup>3</sup>
1962.....	976	19,734,129	408,970	906.9	16,391,108	5,059,615	2,767,547	24,218,270
1961.....	1,074	18,474,888	435,912	3,160.0	15,668,154	4,389,100	2,341,156	22,398,410
1960.....	1,045	15,672,066	453,718	2,244.6	14,899,047	4,015,284	2,502,170	21,416,501

<sup>1</sup> Included in Nova Scotia.

<sup>2</sup> Included in Saskatchewan.

<sup>3</sup> Total area of glass and value of vegetable sales for British Columbia not comparable with data for previous years.

### Subsection 7.—Prices of Agricultural Products

The monthly index of farm prices of agricultural products was designed to measure changes occurring in the average prices farmers receive at the farm from the sale of farm products. In comparing current index numbers with those before August 1965, certain points should be considered. Western grain prices used in the construction of the index before Aug. 1, 1965 are final prices for all grains. For the remaining months of 1965, the western grain prices used in the index are initial prices. Subsequent participation payments made on the 1965 crops will be added to the prices currently used and the index revised upward accordingly.

### 38.—Average Index Numbers of Farm Prices of Agricultural Products, by Province, 1961-65, and Monthly Indexes for 1964 and 1965

(1935-39 = 100)

NOTE.—A description of this index, its coverage and the methods used will be found in *DBS Quarterly Bulletin of Agricultural Statistics* (Catalogue No. 21-003) for October-December 1946. Monthly prices of grain and of livestock are carried in the current issues of the same publication.

Year and Month	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
<b>Averages—</b>										
1961.....	198.3	225.2	220.4	274.3	265.3	261.9	251.3	265.8	276.1	261.2
1962.....	196.7	231.0	215.0	275.9	273.8	278.3	265.2	283.2	284.6	272.0
1963.....	214.3	232.8	222.2	274.6	273.6	268.1	258.1	277.6	278.2	268.4
1964.....	255.1	232.5	245.0	280.5	269.5	261.5	253.5	271.1	273.1	265.8
1965.....	332.6	259.4	302.0	307.5	293.6	252.6	231.0	257.5	294.7	272.2
<b>1964</b>										
January.....	215.2	220.6	214.6	275.8	266.3	261.3	258.4	273.8	267.9	264.2
February.....	201.4	218.3	211.7	275.1	268.7	263.3	258.9	275.5	269.3	265.3
March.....	195.2	219.8	210.5	274.0	267.2	266.4	260.3	277.7	271.1	265.7
April.....	225.9	223.2	223.6	271.4	266.5	265.0	260.5	277.9	274.1	266.0
May.....	279.1	230.8	252.5	271.8	269.5	264.7	260.0	278.1	272.9	268.1
June.....	371.3	248.3	330.2	283.4	274.2	266.0	259.4	280.1	273.3	274.2
July.....	333.6	250.2	296.8	282.1	272.6	263.1	259.7	279.7	275.9	272.4
August.....	291.0	238.3	242.2	283.2	271.4	260.9	251.3	270.1	273.5	266.4
September.....	206.0	230.7	219.0	279.4	271.4	262.1	249.0	267.9	274.4	263.7
October.....	229.0	235.4	226.4	287.9	265.2	255.9	243.4	259.9	273.8	260.1
November.....	239.6	234.5	241.5	288.9	269.5	255.5	240.6	255.9	275.1	260.5
December.....	273.8	240.0	270.5	292.5	271.6	253.8	240.8	256.9	275.6	262.8
<b>1965</b>										
January.....	313.7	242.9	287.7	294.8	273.6	255.4	241.4	255.2	278.8	264.5
February.....	319.1	257.9	301.5	302.3	282.0	257.1	242.8	260.4	290.4	270.5
March.....	310.2	255.9	295.2	301.5	280.0	261.3	245.6	262.3	292.0	271.0
April.....	360.6	262.3	324.1	298.9	282.3	262.2	246.4	263.7	299.3	273.4
May.....	373.3	266.3	349.0	302.6	286.1	264.4	247.6	265.8	301.2	276.6
June.....	420.4	279.3	381.5	312.2	297.8	271.9	252.8	276.3	303.6	286.6
July.....	483.3	291.7	383.1	316.8	304.2	270.9	254.0	278.5	315.0	291.1
August.....	329.6	262.4	273.3	306.8	298.2	239.3	215.6	243.6	289.8	265.0
September.....	232.8	242.8	226.2	301.6	296.4	239.1	217.0	243.3	289.3	261.6
October.....	290.1	252.5	280.1	313.8	298.3	234.6	213.6	243.9	291.3	264.6
November.....	283.0	249.2	263.1	315.6	305.7	234.1	213.6	243.4	290.2	266.4
December.....	275.5	250.1	259.0	323.3	318.9	241.3	217.2	253.8	295.3	274.7



**39.—Average Cash Prices per Bushel of Major Canadian Grains, Crop Years Ended July 31, 1956-65**

(Basis, in store Fort William-Port Arthur)

Year Ended July 31—	Averages in Cents and Eighthths per Bushel				
	Wheat, <sup>1,2</sup> No. 1 N.	Oats, <sup>1</sup> No. 2 C.W.	Barley, <sup>1</sup> No. 3 C.W. —6 Row	Rye, <sup>3</sup> No. 2 C.W.	Flaxseed, <sup>3</sup> No. 1 C.W.
	cts.	cts.	cts.	cts.	cts.
1956.....	174	83/5	114/3	110/1	360/1
1957.....	168/1	80/6	116	119/7	298/4
1958.....	162/3	76/3	111	106	303
1959.....	166/2	77/6	109/7	108	302
1960.....	165/7	82/4	108/1	109/7	334/2
1961.....	167/4	81/2	107/5	105	311/4
1962.....	189/7	96/1	143/7	136/6	368/2
1963.....	196/1	81/6	130/6	137/2	335
1964.....	203/3	78/5	123/4	146/7	319/6
1965.....	198/4	83	133/2	125/4	320/3

<sup>1</sup> Canadian Wheat Board daily fixed prices.<sup>2</sup> International Wheat Agreement and domestic sales.<sup>3</sup> Winnipeg Grain Exchange daily closing cash quotations.**40.—Yearly Average Prices per 100 lb. of Canadian Livestock at Principal Markets, 1962-65**

Item	Toronto				Montreal			
	1962	1963	1964	1965	1962	1963	1964	1965
	\$	\$	\$	\$	\$	\$	\$	\$
Steers, good.....	25.75	23.65	22.70	24.00	26.15	24.10	22.40	23.85
Steers, medium.....	23.75	21.59	20.60	21.90	23.84	22.42	20.55	22.20
Steers, common.....	19.61	17.84	17.08	17.28	19.72	18.94	17.17	18.06
Heifers, good.....	23.11	22.32	20.53	21.05	20.98	20.40	20.25	20.85
Heifers, medium.....	21.31	20.26	18.61	18.96	19.23	18.79	18.50	18.57
Cows, good.....	17.85	17.40	16.00	15.50	17.80	18.05	16.60	15.80
Cows, medium.....	16.20	15.98	14.46	14.25	16.39	16.05	14.62	13.45
Bulls, good.....	19.60	19.45	18.29	16.50	19.75	20.05	18.71	15.92
Feeder steers, good.....	24.90	25.30	22.80	22.70	1	1	1	1
Feeder steers, common.....	21.94	20.98	18.44	18.63	1	1	1	1
Calves, veal, good and choice.....	31.85	30.70	29.85	30.50	29.50	28.05	27.75	28.80
Calves, veal, common and medium.....	24.19	23.93	22.46	19.89	23.00	22.44	20.82	21.17
Hogs, Grade B, dressed.....	28.60	26.80	26.30	32.40	28.15	26.40	25.80	30.75
Lambs, good.....	22.00	23.30	24.30	26.70	20.25	21.25	23.10	29.70
Lambs, common.....	18.21	19.11	20.29	21.64	17.24	18.45	17.05	18.41
Sheep, good.....	9.44	9.10	8.80	8.32	8.82	9.50	8.87	11.10
	Winnipeg				Edmonton			
	1962	1963	1964	1965	1962	1963	1964	1965
	\$	\$	\$	\$	\$	\$	\$	\$
Steers, good.....	24.85	23.00	21.85	23.25	23.70	21.85	20.70	22.15
Steers, medium.....	22.98	21.40	19.92	21.05	22.11	20.48	19.14	20.28
Steers, common.....	18.58	18.81	17.52	17.75	19.36	18.32	16.76	16.68
Heifers, good.....	22.75	21.64	19.74	20.55	21.94	20.21	18.43	19.52
Heifers, medium.....	20.77	19.49	17.65	18.10	19.80	18.84	16.87	19.03
Cows, good.....	17.20	17.10	15.40	14.80	15.65	15.85	14.25	13.30
Cows, medium.....	15.88	15.92	14.33	13.67	14.39	14.51	13.02	11.99
Bulls, good.....	18.12	17.70	16.65	16.13	17.10	16.50	15.15	14.60
Feeder steers, good.....	24.40	23.20	20.85	22.05	23.45	22.65	20.40	21.40
Feeder steers, common.....	21.62	19.90	17.20	19.19	20.01	19.47	16.66	17.49
Feeder cows and heifers, good.....	20.17	19.63	16.52	18.08	18.49	18.54	16.40	15.74
Feeder cows and heifers, common.....	16.25	16.13	13.86	15.29	14.65	14.66	13.41	12.77
Calves, veal, good and choice.....	33.25	32.45	30.70	29.80	27.15	26.90	23.95	22.55
Calves, veal, common and medium.....	26.69	25.36	23.06	23.00	22.27	21.30	18.35	16.46
Hogs, Grade B, dressed.....	25.65	24.80	23.55	30.65	25.40	25.40	22.85	31.00
Lambs, good.....	17.95	18.95	19.80	21.30	17.00	17.80	18.10	20.70
Lambs, common.....	15.44	16.65	17.61	18.51	15.48	15.88	16.68	19.08
Sheep, good.....	4.49	4.65	4.64	4.55	7.52	5.70	5.80	7.04

<sup>1</sup> No sales reported.

## Subsection 8.—Food Consumption

Food consumption figures represent available supplies, including production and imports, adjusted for change of stocks, exports, marketing losses and industrial uses. All calculations are made at the retail stage of distribution, except for meats for which the figures are worked out at the wholesale stage. The amount of food actually eaten would be somewhat lower than indicated because of losses and waste occurring after the products reach the hands of the consumer. It should also be pointed out that there are minor inaccuracies in certain of the figures since statistics of storage stocks in the hands of retailers and consumers are not available.

All basic foods are classified under 12 main commodity groups. The total for each group is computed using a common denominator for the group, for example: milk solids (dry weight) in the dairy products group; fat content for fats and oils; and fresh equivalent for fruits. All foods are included in their basic form, that is, as flour, fat, sugar, etc., rather than in more highly manufactured forms.

The series in Table 41 represents the official estimates of yearly supplies of food moving into consumption, expressed in pounds per capita, for the years 1959-63 as an average for comparison with the years 1963 and 1964.

**41.—Per Capita Supplies of Food Moving into Consumption 1963 and 1964, with Average for 1959-63**

Kinds of Food and Weight Base	Pounds per Capita per Annum			Percentages of 1959-63 Average	
	Average 1959-63	1963	1964	1963	1964
<b>Cereals..... Retail wt.</b>	<b>153.6</b>	<b>157.3</b>	<b>145.8</b>	<b>102.4</b>	<b>94.9</b>
Flour (including rye flour).....	135.9	139.1	127.1	102.4	93.5
Oatmeal and rolled oats.....	4.9	5.0	5.2	102.0	106.1
Pot and pearl barley.....	0.2	0.1	0.1	50.0	50.0
Corn meal and flour.....	1.8	2.2	2.5	122.2	138.9
Buckwheat flour.....	0.1	0.1	0.1	100.0	100.0
Rice.....	3.9	4.0	3.9	102.6	100.0
Breakfast food.....	6.8	6.8	6.9	100.0	101.5
<b>Potatoes..... Fresh equiv.</b>	<b>156.1</b>	<b>154.8</b>	<b>157.5</b>	<b>99.2</b>	<b>100.9</b>
White potatoes, fresh..... Retail wt.	140.1	132.8	133.1	94.8	95.0
Sweet potatoes, fresh.....	0.5	0.4	0.4	80.0	80.0
<b>Sugars and Syrups..... Sugar content</b>	<b>104.8</b>	<b>103.0</b>	<b>106.1</b>	<b>98.3</b>	<b>101.2</b>
Sugar..... Refined wt.	97.2	94.7	98.3	97.4	101.1
Maple sugar..... Retail wt.	0.8	0.7	0.4	87.5	50.0
Honey.....	1.8	1.9	1.8	105.6	100.0
Other.....	8.9	10.1	9.8	113.5	110.1
<b>Pulses and Nuts..... Retail wt.</b>	<b>10.0</b>	<b>9.5</b>	<b>10.4</b>	<b>95.0</b>	<b>104.0</b>
Dry beans <sup>2</sup> .....	2.6	2.4	2.6	92.3	100.0
Dry peas.....	1.5	1.6	2.1	106.7	140.0
Peanuts.....	3.1	2.9	3.2	93.5	103.2
Tree nuts.....	1.2	1.1	1.1	91.7	91.7
Cocoa.....	1.5	1.5	1.4	100.0	93.3
<b>Fruit..... Fresh equiv.</b>	<b>245.9</b>	<b>241.1</b>	<b>239.9</b>	<b>98.0</b>	<b>97.6</b>
Tomatoes and Citrus Fruit—					
Tomatoes, fresh..... Retail wt.	21.8	18.0	20.1	82.6	92.2
Tomato products <sup>3</sup> ..... Net wt. canned	21.0	23.1	19.6	110.0	93.3
Citrus fruit, fresh..... Retail wt.	26.9	20.7	24.0	77.0	89.2
Citrus fruit juice..... Net wt. canned	15.5	13.3	11.4	85.8	73.5
Other Fruit—					
Fresh..... Retail wt.	71.3	77.6	77.9	108.8	109.3
Canned..... Net wt. canned	11.2	10.7	10.8	95.5	96.4
Juice.....	6.2	8.1	10.4	130.6	167.7
Frozen..... Retail wt.	2.4	2.8	3.4	116.7	141.7
Unspecified..... Fresh equiv.	32.4	27.7	29.3	85.5	90.4

For footnotes, see end of table.

**41.—Per Capita Supplies of Food Moving into Consumption 1963 and 1964, with  
Average for 1959-63—concluded**

Kinds of Food and Weight Base	Pounds per Capita per Annum			Percentages of 1959-63 Average	
	Average 1959-63	1963	1964	1963	1964
<b>Vegetables..... Fresh equiv.</b>	<b>103.7</b>	<b>104.1</b>	<b>105.4</b>	<b>100.4</b>	<b>101.6</b>
Fresh—					
Cabbage and greens..... Retail wt.	17.5	17.5	17.0	100.0	97.1
Carrots..... "	14.3	14.4	14.4	100.7	100.7
Legumes..... "	1.1	1.7	1.4	154.5	127.3
Other..... "	36.8	37.3	33.5	101.4	91.0
Processed—					
Canned..... Net wt. canned	16.2	16.1	16.5	99.4	101.9
Frozen..... Retail wt.	1.2	2.2	3.3	266.7	275.0
Other..... Fresh equiv.	13.2	9.3	14.9	70.5	112.9
<b>Oils and Fats..... Fat content</b>	<b>44.5</b>	<b>45.4</b>	<b>45.4</b>	<b>102.0</b>	<b>102.0</b>
Margarine..... Retail wt.	9.4	9.2	8.9	97.9	94.7
Lard..... "	8.6	7.5	7.7	87.2	89.5
Shortening..... "	9.4	9.9	10.3	105.3	109.6
Salad and cooking oil..... "	4.4	5.0	4.8	113.6	109.1
Butter..... "	17.7	19.1	19.0	107.9	107.3
<b>Eggs..... Fresh equiv.</b>	<b>33.9</b>	<b>32.2</b>	<b>32.2</b>	<b>95.0</b>	<b>95.0</b>
<b>Meat..... Carcass wt.</b>	<b>141.0</b>	<b>143.3</b>	<b>149.1</b>	<b>101.6</b>	<b>105.7</b>
Pork..... "	51.9	50.7	52.0	97.7	100.2
Beef..... "	69.6	73.7	78.5	105.9	112.8
Veal..... "	6.7	6.6	6.9	98.5	103.0
Mutton and lamb..... "	3.4	2.9	3.4	114.7	100.0
Offal..... "	4.5	4.0	3.8	88.9	84.4
Canned meat..... Net wt. canned	5.5	5.2	5.5	94.5	100.0
<b>Poultry and Fish..... Edible wt.</b>	<b>35.4</b>	<b>38.6</b>	<b>40.5</b>	<b>109.0</b>	<b>114.4</b>
Hens and chickens <sup>1</sup> ..... Eviscerated wt.	22.5	23.7	25.4	105.3	112.9
Other poultry..... "	8.0	8.8	9.1	110.0	120.0
Fish and shellfish, fresh and frozen..... Edible wt.	8.0	9.4	9.8	117.5	122.5
Fish, cured (smoked, salted, pickled)..... "	1.6	1.7	1.8	106.2	112.5
Fish and shellfish, canned..... Net wt. canned	3.3	3.4	3.3	103.0	100.0
<b>Milk and Cheese..... Milk solids</b>	<b>65.8</b>	<b>65.0</b>	<b>64.3</b>	<b>98.8</b>	<b>97.7</b>
Cheddar cheese <sup>5</sup> ..... Retail wt.	6.2	6.6	6.9	106.5	111.3
Other cheese..... "	1.4	1.6	1.6	114.3	114.3
Cottage cheese..... "	1.3	1.4	1.5	107.7	115.4
Evaporated whole milk..... "	17.9	17.2	16.6	96.1	92.7
Condensed whole milk..... "	0.9	1.0	0.9	111.1	100.0
Whole milk powder and cream powder <sup>6</sup> ..... "	0.3	0.4	0.2	133.3	66.7
Skim milk powder..... "	7.5	8.1	8.0	108.0	106.7
Milk in ice cream..... "	33.8	26.4	25.4	78.1	75.1
Powdered buttermilk..... "	0.5	0.5	0.5	100.0	100.0
Fluid whole milk <sup>7</sup> ..... "	336.8	323.4	321.6	96.0	95.5
Miscellaneous milk products <sup>8</sup> ..... "	2.3	3.4	3.6	147.8	156.5
<b>Beverages..... Primary distribution wt.</b>	<b>11.8</b>	<b>12.2</b>	<b>11.3</b>	<b>103.4</b>	<b>95.8</b>
Tea..... "	2.4	2.5	2.4	104.2	100.0
Coffee..... Green beans	9.4	9.7	8.9	103.2	94.7

<sup>1</sup> Fluctuations in apparent per capita flour consumption are caused partly by lack of complete data on flour inventories in all positions. <sup>2</sup> Includes soybean flour. <sup>3</sup> Tomatoes canned, tomato juice, tomato

pulp, paste and purée, and ketchup. <sup>4</sup> Exclusive of Newfoundland. <sup>5</sup> Includes process cheese.

<sup>6</sup> Cream powder included in whole milk powder for 1963 and 1964. <sup>7</sup> Includes cream expressed as milk.

<sup>8</sup> Includes evaporated and condensed skim milk, condensed buttermilk, sugar of milk, formula skim milk products and concentrated liquid skim milk.

**Disappearance of Meats and Lard.**—Production of meats from slaughter in Canada, total supply, distribution and per capita disappearance of meats and lard are shown in Table 42. All estimates are on a carcass-weight basis except canned meats, which are in terms of product.



## 42.—Supply, Distribution and Disappearance of Meats and Lard, 1960-65

Item	1960	1961	1962	1963	1964	1965
<b>Beef—</b>						
Animals slaughtered in Canada..... '000	2,471.3	2,510.9	2,503.6	2,653.6	2,925.1	3,173.8
Estimated dressed weight..... '000 lb.	1,266,280	1,302,641	1,297,203	1,408,778	1,551,246	1,647,891
On hand, Jan. 1..... "	27,958	29,208	33,350	33,719	41,085	45,041
Imports for consumption..... "	31,054	30,990	37,555	37,617	27,348	18,511
Total Supply..... "	1,325,292	1,362,839	1,368,108	1,480,114	1,619,679	1,711,451
Exports..... "	25,942	37,536	27,656	25,564	42,770	102,293
Used for canning..... "	20,103	20,657	19,086	18,251	19,812	19,781
On hand, Dec. 31..... "	29,208	33,350	33,719	41,085	45,045	46,191
DOMESTIC DISAPPEARANCE..... '000 lb.	1,250,039	1,271,296	1,287,647	1,395,214	1,512,051	1,543,181
PER CAPITA DISAPPEARANCE..... lb.	70.0	69.7	69.2	73.7	78.5	78.7
<b>Veal—</b>						
Animals slaughtered in Canada..... '000	1,081.7	1,048.8	990.1	1,049.6	1,091.5	1,248.8
Estimated dressed weight..... '000 lb.	125,155	123,754	121,488	127,436	134,800	150,443
On hand, Jan. 1..... "	3,925	4,970	2,652	3,867	5,094	5,918
Imports for consumption..... "	1	1	1	1	1	1
Total Supply..... "	129,080	128,724	125,140	131,303	139,894	162,361
Exports..... "	1	1	1	1	1	1
Used for canning..... "	959	1,321	1,198	1,419	1,424	1,248
On hand, Dec. 31..... "	4,970	3,652	3,867	5,094	5,918	4,378
DOMESTIC DISAPPEARANCE..... '000 lb.	123,151	123,751	120,075	124,790	132,552	156,733
PER CAPITA DISAPPEARANCE..... lb.	6.9	6.8	6.5	6.6	6.9	8.0
<b>Mutton and Lamb—</b>						
Animals slaughtered in Canada..... '000	737.4	816.0	764.6	697.4	660.6	566.2
Estimated dressed weight..... '000 lb.	31,561	35,086	32,671	30,481	29,124	24,583
On hand, Jan. 1..... "	6,080	7,816	9,932	7,054	9,298	9,147
Imports for consumption..... "	23,532	33,433	37,587	47,856	37,356	30,299
Total Supply..... "	61,173	76,335	80,190	85,391	75,778	64,028
Exports..... "	109	173	556	679	757	370
Used for canning..... "	810	1,185	1,232	1,108	1,227	1,454
On hand, Dec. 31..... "	7,816	9,932	7,054	9,298	9,147	6,625
DOMESTIC DISAPPEARANCE..... '000 lb.	52,438	65,045	71,348	74,306	64,647	55,580
PER CAPITA DISAPPEARANCE..... lb.	2.9	3.6	3.8	3.9	3.4	2.8
<b>Pork—</b>						
Animals slaughtered in Canada..... '000	7,804.4	7,522.1	7,648.2	7,601.0	8,301.0	8,111.7
Estimated dressed weight <sup>2</sup> ..... '000 lb.	988,035	966,595	978,185	978,295	1,060,651	1,029,270
On hand, Jan. 1..... "	56,549	21,139	24,648	18,357	25,236	27,286
Imports for consumption..... "	17,706	41,859	35,602	89,465	53,758	37,222
Total Supply..... "	1,062,290	1,029,593	1,038,435	1,086,117	1,139,645	1,093,778
Exports..... "	67,691	52,394	47,922	47,420	53,959	58,029
Used for canning..... "	33,602	42,255	46,764	54,663	56,937	48,537
On hand, Dec. 31..... "	21,139	24,648	18,357	25,236	27,286	22,555
DOMESTIC DISAPPEARANCE..... '000 lb.	939,858	910,296	925,392	958,798	1,001,463	964,657
PER CAPITA DISAPPEARANCE..... lb.	52.6	49.9	49.8	50.7	52.0	49.2
<b>Canned Meats—</b>						
Estimated production..... '000 lb.	66,681	84,928	88,893	92,263	98,653	94,032
On hand, Jan. 1..... "	127,274	48,473	42,775	29,478	17,560	15,880
Imports for consumption..... "	12,487	18,105	12,405	16,407	13,780	15,142
Total Supply..... "	206,442	151,506	144,073	138,148	129,993	125,054
Exports..... "	24,357	9,623	16,487	21,991	8,324	6,107
On hand, Dec. 31..... "	48,473	42,775	29,478	17,560	15,880	12,435
DOMESTIC DISAPPEARANCE..... '000 lb.	133,612	99,108	98,108	98,597	105,789	106,512
PER CAPITA DISAPPEARANCE..... lb.	7.5	5.4	5.3	5.2	5.5	5.4

For footnotes, see end of table.

42.—Supply, Distribution and Disappearance of Meats and Lard, 1960-65—concluded

Item	1960	1961	1962	1963	1964	1965
<b>Offal—</b>						
Estimated production..... '000 lb.	95,849	95,389	95,501	98,454	107,873	112,791
On hand, Jan. 1..... "	5,251	5,042	5,906	5,001	6,217	6,835
Imports for consumption..... "	5,063	3,426	3,997	4,743	2,850	2,048
Total Supply..... "	106,163	103,857	105,404	108,198	116,940	121,674
Exports..... "	14,434	14,146	20,410	23,911	34,013	45,201
Used for canning..... "	1,673	2,059	1,818	2,057	2,034	1,815
On hand, Dec. 31..... "	5,042	5,906	5,001	6,217	6,835	7,428
DOMESTIC DISAPPEARANCE..... '000 lb.	85,014	81,746	78,175	76,013	74,058	67,230
PER CAPITA DISAPPEARANCE..... lb.	4.8	4.5	4.2	4.0	3.8	3.4
<b>Lard—<sup>3</sup></b>						
Estimated production..... '000 lb.	142,193	130,191	123,513	125,407	133,103	121,777
On hand, Jan. 1..... "	7,663	5,949	6,921	6,263	5,844	6,976
Imports for consumption..... "	20,903	25,145	24,784	17,073	16,001	17,073
Total Supply..... "	170,759	161,285	155,218	148,743	154,948	145,826
Exports..... "	1,667	912	32	23	34	31
On hand, Dec. 31..... "	5,949	6,921	6,263	5,844	6,976	5,073
DOMESTIC DISAPPEARANCE..... '000 lb.	163,143	153,452	148,923	142,876	147,938	140,722
PER CAPITA DISAPPEARANCE..... lb.	9.1	8.4	8.0	7.5	7.7	7.2

<sup>1</sup> Quantity small; included with beef.      <sup>2</sup> Trimmed of larding fat and excluding offal.      <sup>3</sup> Includes commercial lard production and estimated lard equivalent of renderable pork fat available from all uninspected slaughter.

## Section 4.—Agricultural Statistics of the Census

Data from the Census of Agriculture taken June 1, 1966 were not available at the time of preparation of this volume. Preliminary reports are scheduled for release in April-June of 1967 and final reports in October and November of that year. A list of these reports and their prices is available from the DBS on request.

Meanwhile, 1956 and 1961 Census of Agriculture data showing number of farms and use of farm land by province is given in Tables 43 and 44. Additional brief data on size of farms, persons employed in agriculture, farm machinery, farm electrification and farm capital are included in the 1966 Year Book at pp. 511-514 and on the economic classification of farms and tenure and age of farm operators in the 1963-64 edition at pp. 478-482. Details are contained in Vol. V of the 1961 *Census of Canada* and in a number of special census reports, all procurable from the DBS or the Queen's Printer, Ottawa.

**Number of Farms.**—There were 16 p.c. fewer farms in Canada in 1961 than in 1956, the year of the immediately preceding census. The number dropped from 575,015 in the earlier year to 480,903 in the later. However, part of this decrease was attributable to a change in the census definition of a farm. In the 1956 (and 1951) Census, a farm was defined as a holding on which agricultural operations were carried out and which was (a) three acres or more in size, or (b) from one to three acres in size and with agricultural production during the previous year valued at \$250 or more. In the 1961 Census, a farm was defined as a holding of one acre or more with the sales of agricultural products during the previous year valued at \$50 or more. On the basis of the 1956 definition, the decrease in the number of farms was from 575,015 to 521,634 in 1961, or about 9 p.c.

## 43.—Number of Farms, by Province, Censuses of 1956 and 1961

Province or Territory	1956 (1956 Definition) <sup>1</sup>	1961 (1961 Definition) <sup>1</sup>	P.C. Change 1956-61	1961 (1956 Definition) <sup>1</sup>	P.C. Change 1956-61
	No.	No.		No.	
Newfoundland.....	2,387	1,752	-26.6	3,358	+40.7
Prince Edward Island.....	9,432	7,335	-22.2	8,025	-14.9
Nova Scotia.....	21,075	12,518	-40.6	18,264	-13.3
New Brunswick.....	22,116	11,786	-46.7	18,331	-17.1
Quebec.....	122,617	95,777	-21.9	108,865	-11.2
Ontario.....	140,602	121,333	-13.7	127,492	-9.3
Manitoba.....	49,201	43,306	-12.0	44,264	-10.0
Saskatchewan.....	103,391	93,924	-9.2	94,402	-8.7
Alberta.....	79,424	73,212	-7.8	74,661	-6.0
British Columbia.....	24,748	19,934	-19.5	23,946	-3.2
Yukon and Northwest Territories.....	22	26	+18.2	26	+18.2
<b>Canada.....</b>	<b>575,015</b>	<b>480,903</b>	<b>-16.4</b>	<b>521,634</b>	<b>-9.3</b>

<sup>1</sup> See text immediately preceding table.

**Farm Areas.**—The total area of farms as defined in the 1961 Census was 172,551,051 acres, only slightly less than the 173,923,691 acres recorded in 1956. Improved farm land for the country as a whole was up 3 p.c. from 100,326,243 acres to 103,403,426 acres and unimproved farm land, which includes woodland and rough pasture, was down about 6 p.c. from 73,597,448 acres to 69,147,625 acres. Decreases in total farm area in the six eastern provinces and in British Columbia offset by almost 1,400,000 acres the increases in total farm area in the Prairie Provinces and the Territories. As Table 44 shows, only Manitoba, Alberta and British Columbia reported more farm land under crops in 1961 than in 1956 but the total increase in these provinces was somewhat less than the total decrease in the other provinces. On the other hand, the total increase in improved pasture in the four western provinces was somewhat greater than the total decrease in the eastern provinces and there was a substantial increase in the acreage under summer fallow for Canada as a whole.

## 44.—Use of Farm Land, by Province, Censuses of 1956 and 1961

Item	Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick	
	1956	1961	1956	1961	1956	1961	1956	1961
	acres	acres	acres	acres	acres	acres	acres	acres
<b>Improved Land.....</b>	<b>21,234</b>	<b>20,455</b>	<b>645,492</b>	<b>579,558</b>	<b>629,874</b>	<b>497,521</b>	<b>951,291</b>	<b>734,107</b>
Under crops <sup>1</sup> .....	15,968	12,919	419,099	391,112	416,235	329,114	617,279	482,548
Pasture (improved) ...	5,739	4,097	201,225	167,913	161,424	127,468	252,685	200,047
Summer fallow.....	92	145	2,463	2,532	2,649	2,654	13,560	5,648
Other.....	2,435	3,294	22,705	18,001	49,566	38,285	67,766	45,864
<b>Unimproved Land .....</b>	<b>47,580</b>	<b>34,106</b>	<b>419,971</b>	<b>380,599</b>	<b>2,145,768</b>	<b>1,732,874</b>	<b>2,030,158</b>	<b>1,465,568</b>
Woodland.....	26,919	19,802	334,226	296,759	1,566,071	1,362,869	1,703,702	1,230,861
Other.....	20,661	14,304	85,745	83,840	579,697	370,005	326,456	234,707
<b>Totals, Farm Area..</b>	<b>71,814</b>	<b>54,561</b>	<b>1,065,463</b>	<b>960,157</b>	<b>2,775,642</b>	<b>2,230,395</b>	<b>2,981,449</b>	<b>2,199,675</b>

<sup>1</sup> Includes field, vegetable, fruit and nursery crop land.



## 44.—Use of Farm Land, by Province, Censuses of 1956 and 1961—concluded

Item	Quebec		Ontario		Manitoba		Saskatchewan	
	1956	1961	1956	1961	1956	1961	1956	1961
	acres	acres	acres	acres	acres	acres	acres	acres
<b>Improved Land</b> .....	<b>8,629,835</b>	<b>7,864,176</b>	<b>12,572,157</b>	<b>12,032,924</b>	<b>11,453,783</b>	<b>11,963,994</b>	<b>40,506,000</b>	<b>43,117,813</b>
Under crops <sup>1</sup> .....	5,549,524	5,213,302	8,219,407	7,990,358	7,686,013	7,688,728	24,480,501	23,923,192
Pasture (improved).....	2,642,764	2,312,950	3,470,688	3,295,609	594,902	719,819	1,128,001	1,394,280
Summer fallow.....	67,082	46,344	333,973	244,842	2,827,551	3,230,095	14,193,468	17,179,572
Other.....	370,465	291,580	548,089	502,115	345,317	325,352	704,030	620,769
<b>Unimproved Land</b> .....	<b>7,280,293</b>	<b>6,334,316</b>	<b>7,307,489</b>	<b>6,545,583</b>	<b>6,478,034</b>	<b>6,205,957</b>	<b>22,287,979</b>	<b>21,297,705</b>
Woodland.....	4,877,803	4,501,305	3,338,870	3,257,589	1,566,494	1,490,673	2,379,043	2,194,920
Other.....	2,402,490	1,833,011	3,968,619	3,287,994	4,911,540	4,715,284	19,908,936	19,102,785
<b>Totals, Farm Area.</b> .....	<b>15,910,128</b>	<b>14,198,492</b>	<b>19,879,646</b>	<b>18,578,507</b>	<b>17,931,817</b>	<b>18,169,951</b>	<b>62,793,979</b>	<b>64,415,518</b>
	Alberta		British Columbia		Y.T. and N.W.T.		Canada	
	1956	1961	1956	1961	1956	1961	1956	1961
	acres	acres	acres	acres	acres	acres	acres	acres
<b>Improved Land</b> .....	<b>23,746,113</b>	<b>25,288,527</b>	<b>1,166,752</b>	<b>1,303,263</b>	<b>712</b>	<b>1,088</b>	<b>100,326,243</b>	<b>103,403,426</b>
Under crops <sup>1</sup> .....	14,850,171	15,614,839	689,749	788,896	230	526	62,944,176	62,435,524
Pasture (improved).....	1,279,894	1,670,391	320,251	354,830	245	492	10,057,819	10,247,896
Summer fallow.....	7,091,264	7,449,758	87,479	81,785	44	11	24,619,625	28,243,386
Other.....	524,784	553,539	69,273	77,752	193	59	2,704,623	2,476,610
<b>Unimproved Land</b> .....	<b>22,224,282</b>	<b>21,940,126</b>	<b>3,372,129</b>	<b>3,203,289</b>	<b>3,765</b>	<b>7,502</b>	<b>73,597,448</b>	<b>69,147,625</b>
Woodland.....	2,891,128	2,138,137	855,398	752,990	887	1,484	19,540,541	17,247,389
Other.....	19,333,154	19,801,989	2,516,731	2,450,299	2,878	6,018	54,056,907	51,900,236
<b>Totals, Farm Area.</b> .....	<b>45,970,395</b>	<b>47,228,653</b>	<b>4,538,881</b>	<b>4,506,552</b>	<b>4,477</b>	<b>8,590</b>	<b>173,923,691</b>	<b>172,551,051</b>

<sup>1</sup> Includes field, vegetable, fruit and nursery crop land.

## Section 5.—International Crop Statistics

Tables 45 and 46 are based on estimates published in March and April 1966 by the Foreign Agricultural Service, United States Department of Agriculture, and give the acreages and production of wheat and the production of oats and barley for the harvests of 1964 and 1965 with average for the years 1955-59, in the leading countries of the world.

## 45.—Estimated Acreages and Production of Wheat Harvested in 1964 and 1965 in Specified Countries, with Average for 1955-59

Continent and Country	Acreages of Wheat			Production of Wheat		
	Average 1955-59	1964	1965	Average 1955-59	1964	1965
	'000	'000	'000	'000 bu.	'000 bu.	'000 bu.
<b>North America<sup>1</sup></b> .....	<b>74,160</b>	<b>80,910</b>	<b>79,689</b>	<b>1,606,000</b>	<b>1,958,000</b>	<b>2,083,000</b>
Canada.....	22,730	29,686	28,282	465,618	600,424	677,917
Mexico.....	2,210	2,016	1,969	44,616	66,138	77,160
United States.....	49,128	49,121	49,313	1,095,357	1,290,650	1,326,747

For footnote, see end of table, p. 506.

**45.—Estimated Acreages and Production of Wheat Harvested in 1964 and 1965 in Specified Countries, with Average for 1955-59—concluded**

Continent and Country	Acreages of Wheat			Production of Wheat		
	Average 1955-59	1964	1965	Average 1955-59	1964	1965
	'000	'000	'000	'000 bu.	'000 bu.	'000 bu.
<b>Europe<sup>1</sup></b>	<b>71,890</b>	<b>71,840</b>	<b>71,400</b>	<b>1,866,000</b>	<b>2,245,000</b>	<b>2,400,000</b>
Europe West <sup>1</sup>	46,580	46,040	46,600	1,313,000	1,585,000	1,635,000
Austria	634	699	707	20,800	27,577	25,202
Belgium	501	533	562	26,669	33,065	31,500
Britain	2,098	2,206	2,536	101,718	139,364	153,227
Denmark	179	317	311	10,516	19,878	20,466
Finland	314	663	660	7,510	17,005	18,397
France	10,432	10,843	11,120	357,997	508,446	527,245
Germany, West	3,059	3,574	3,489	139,071	191,161	159,749
Greece	2,704	2,984	2,776	57,760	79,720	73,437
Ireland	361	214	182	15,280	8,997	7,470
Italy	12,145	10,892	10,602	230,330	315,342	359,225
Netherlands	250	374	392	14,311	26,163	25,392
Norway	35	18	10	1,130	740	434
Portugal	2,009	1,693	1,730	24,210	17,328	24,691
Spain	10,728	10,059	10,506	165,400	145,720	160,000
Sweden	831	667	711	28,030	39,095	34,260
Switzerland	243	251	250	10,860	13,705	12,570
Europe East <sup>1</sup>	25,310	25,800	24,800	553,000	660,000	765,000
Bulgaria	3,466	3,138	3,090	79,000	74,590	108,400
Czechoslovakia	1,818	2,053	2,026	54,500	67,200	66,140
Germany, East	1,026	1,070	1,063	42,160	49,530	47,770
Hungary	3,112	2,747	2,674	68,500	75,665	86,200
Poland	3,581	4,051	4,150	83,900	112,875	123,500
Romania	7,302	7,310	7,400	118,600	140,500	202,000
Yugoslavia	4,750	5,189	4,151	102,000	125,950	127,130
U.S.S.R. (Europe and Asia) <sup>2</sup>	159,000	167,800	161,000	1,910,000	2,100,000	1,700,000
<b>Asia<sup>1</sup></b>	<b>144,490</b>	<b>147,200</b>	<b>145,200</b>	<b>1,871,000</b>	<b>1,924,000</b>	<b>1,990,000</b>
China, Mainland	65,500	..	880,000	..	..	..
Cyprus	196	165	162	2,741	1,680	2,940
India	30,393	33,349	33,245	331,870	362,300	443,800
Iran	..	..	..	95,950	95,500	106,600
Iraq	2,540	..	..	27,120	23,500	29,500
Israel	137	138	168	2,420	4,650	5,440
Japan	1,551	1,256	1,176	50,485	45,709	47,289
Jordan	638	733	696	5,460	10,828	10,500
Korea, South	317	361	..	4,470	6,140	..
Lebanon	162	146	146	1,680	1,470	2,000
Pakistan	11,741	12,544	13,272	130,703	154,185	169,940
Syria	2,540	3,650	3,580	25,940	40,400	38,200
Turkey	16,990	17,600	18,000	227,890	257,000	275,000
<b>Africa<sup>1</sup></b>	<b>17,120</b>	<b>17,900</b>	<b>18,200</b>	<b>196,000</b>	<b>214,000</b>	<b>223,000</b>
Algeria	4,658	..	..	46,364	41,200	49,600
Egypt	1,559	1,344	1,450	53,802	55,100	58,800
Morocco	3,888	3,776	4,095	35,720	43,940	43,350
South Africa, Republic of	2,500	3,150	2,130	27,640	39,350	25,980
Tunisia	2,908	2,743	2,735	17,800	12,900	19,100
<b>South America<sup>1</sup></b>	<b>18,760</b>	<b>19,800</b>	<b>15,900</b>	<b>324,000</b>	<b>508,000</b>	<b>321,000</b>
Argentina	11,598	14,500	..	225,949	415,000	240,000
Brazil	2,386	..	..	24,460	10,000	8,500
Chile	2,048	2,099	2,100	40,585	45,782	42,255
Colombia	423	262	314	5,012	3,123	4,042
Peru	365	369	370	5,170	5,260	5,440
Uruguay	1,604	1,802	940	18,950	23,730	15,430
<b>Oceania<sup>1</sup></b>	<b>9,995</b>	<b>18,100</b>	<b>17,400</b>	<b>173,000</b>	<b>378,000</b>	<b>270,000</b>
Australia	9,892	17,919	17,160	168,217	368,800	260,000
New Zealand	103	184	200	4,810	9,016	9,500
<b>World Totals<sup>1</sup></b>	<b>495,400</b>	<b>523,600</b>	<b>509,000</b>	<b>7,946,000</b>	<b>9,327,000</b>	<b>8,987,000</b>

<sup>1</sup> Estimated totals, which in the case of production are rounded to millions, include allowances for any missing data for countries shown and for other producing countries not shown. <sup>2</sup> Tentative unofficial acreage and production estimates.

### 46.—Estimated Production of Oats and Barley Harvested in 1964 and 1965 in Specified Countries, with Average for 1955-59

Continent and Country	Oats			Barley		
	Average 1955-59	1964	1965	Average 1955-59	1964	1965
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.
<b>North America<sup>1</sup></b>	<b>1,660,000</b>	<b>1,243,000</b>	<b>1,380,000</b>	<b>671,000</b>	<b>578,000</b>	<b>634,000</b>
Canada.....	374,764	357,178	414,957	237,926	166,816	214,555
Mexico.....	5,308	5,390	5,370	8,500	7,810	7,920
United States.....	1,278,145	880,095	959,192	424,448	402,895	411,897
<b>Europe<sup>1</sup></b>	<b>1,315,000</b>	<b>1,100,000</b>	<b>1,095,000</b>	<b>1,050,000</b>	<b>1,617,000</b>	<b>1,690,000</b>
Europe West <sup>1</sup> .....	935,000	805,000	780,000	800,000	1,317,000	1,365,000
Austria.....	23,740	22,520	19,300	17,110	27,800	24,710
Belgium.....	31,470	25,710	21,260	14,520	23,680	23,940
Britain.....	163,310	92,750	84,980	148,200	345,520	376,180
Denmark.....	51,210	56,560	53,670	110,090	179,150	189,460
Finland.....	48,160	51,120	70,280	15,010	16,980	23,040
France.....	224,270	159,150	167,490	197,890	311,910	334,750
Germany, West.....	156,630	159,000	140,960	111,700	179,830	154,690
Greece.....	11,000	10,680	12,200	10,950	12,780	15,910
Ireland.....	24,380	19,950	20,580	16,110	22,770	24,220
Italy.....	37,490	32,080	36,330	13,240	11,550	13,080
Luxembourg.....	2,890	2,070	2,270	—	—	—
Netherlands.....	32,140	28,920	25,000	12,970	17,260	17,120
Norway.....	9,320	8,650	7,810	13,480	22,050	22,270
Portugal.....	7,450	4,660	5,930	3,850	2,090	2,800
Spain.....	27,000	26,250	25,770	82,470	73,950	66,970
Sweden.....	58,750	99,760	82,510	26,760	63,700	67,850
Switzerland.....	3,850	2,600	2,140	3,430	4,820	4,270
Europe East <sup>1</sup> .....	380,000	295,000	315,000	250,000	300,000	325,000
Bulgaria.....	12,120	10,610	7,600	21,080	28,480	42,070
Czechoslovakia.....	64,830	46,090	45,200	61,775	65,630	63,200
Germany, East.....	72,338	53,400	51,950	37,760	68,710	63,380
Hungary.....	14,605	3,790	3,450	38,860	37,570	46,000
Poland.....	168,650	154,000	174,000	55,630	58,240	62,700
Romania.....	22,530	5,440	5,300	16,940	15,980	16,080
Yugoslavia.....	24,090	20,190	23,220	21,890	24,530	31,300
U.S.S.R. (Europe and Asia) <sup>2</sup> .....	845,000	270,000	320,000	440,000	1,090,000	870,000
<b>Asia<sup>1</sup></b>	<b>105,000</b>	<b>100,000</b>	<b>100,000</b>	<b>845,000</b>	<b>770,000</b>	<b>790,000</b>
China.....	65,000	—	—	311,000	—	—
Cyprus.....	—	—	—	3,050	2,600	5,970
India.....	—	—	—	124,600	93,580	107,660
Iran.....	—	—	—	42,530	41,000	46,000
Iraq.....	—	—	—	44,990	32,000	44,000
Israel.....	—	—	—	2,950	5,340	3,220
Japan.....	12,188	8,360	9,140	93,530	51,700	51,950
Korea, Republic of.....	—	—	—	36,260	42,600	65,390
Pakistan.....	—	—	—	6,620	5,690	5,970
Syria.....	456	140	140	16,060	29,260	31,700
Turkey.....	25,406	29,280	31,000	139,000	128,600	142,380
<b>Africa<sup>1</sup></b>	<b>15,000</b>	<b>15,000</b>	<b>12,000</b>	<b>125,000</b>	<b>115,000</b>	<b>120,000</b>
Algeria.....	4,840	—	—	34,000	16,500	16,000
Morocco.....	1,570	1,330	1,220	55,250	55,070	55,000
South Africa, Republic of.....	6,040	9,560	6,870	1,150	1,790	1,530
Tunisia.....	660	—	—	8,440	5,970	8,270
United Arab Republic.....	—	—	—	6,090	6,500	5,970
<b>South America<sup>1</sup></b>	<b>77,000</b>	<b>70,000</b>	<b>50,000</b>	<b>77,000</b>	<b>67,000</b>	<b>48,000</b>
Argentina.....	64,620	55,430	31,700	50,510	37,200	19,570
Chile.....	7,970	8,240	8,960	4,930	6,220	6,000
Colombia.....	—	—	—	3,290	5,050	4,410
Ecuador.....	—	—	—	3,930	3,120	3,220
Peru.....	—	—	—	8,550	8,400	8,820
Uruguay.....	2,789	5,900	6,130	1,460	1,840	1,150
<b>Oceania</b>	<b>66,060</b>	<b>89,840</b>	<b>65,100</b>	<b>48,370</b>	<b>56,060</b>	<b>44,850</b>
Australia.....	63,630	87,550	63,000	45,400	51,370	39,900
New Zealand.....	2,430	2,290	2,100	2,970	4,690	4,950
<b>World Totals<sup>1</sup></b>	<b>4,085,000</b>	<b>2,890,000</b>	<b>3,022,100</b>	<b>3,255,000</b>	<b>4,295,000</b>	<b>4,200,000</b>

<sup>1</sup> Estimated totals, which are rounded to millions, include allowances for any missing data for countries shown and for other producing countries not shown.

<sup>2</sup> Tentative unofficial production estimates.



## CHAPTER XII.—FORESTRY\*

### CONSPECTUS

	PAGE		PAGE
SECTION 1. FOREST RESOURCES.....	508	SECTION 4. FOREST ADMINISTRATION, RE- SEARCH AND CONSERVATION.....	522
SECTION 2. FOREST DEPLETION.....	514	Subsection 1. Federal Forestry Program...	522
SECTION 3. STATISTICS OF FOREST AND ALLIED INDUSTRIES.....	516	Subsection 2. Provincial Forestry Programs	526
Subsection 1. Woods Operations.....	516	Subsection 3. The Pulp and Paper Research Institute of Canada.....	534
Subsection 2. Wood Industries.....	517		
Subsection 3. Paper and Allied Industries..	519		

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

Canada's extensive forests have been an invaluable asset to the country and its people since the earliest days of settlement. The productive portion of these forests has poured increasing wealth into the stream of national income, contributing to the economy of the country as the producer of raw materials for industry and as the source of livelihood for hundreds of thousands of persons. Perhaps in no other country is the national wealth so dependent upon its forest resources and the success of its forest industries as in Canada. The annual forest harvest of some 3,424,000,000 cu. ft. supports a highly complex and diversified export and domestic industry directly employing more than 300,000 persons and paying out \$1,200,000,000 annually in salaries and wages. The forests support 8,000 sawmills and 4,000 wood-using plants, many of them small units contributing appreciably to the income of local economies. The pulp and paper industry alone stands first among Canadian manufactures in terms of employment, wages paid, new investment and net value of output, and the sale of forest products abroad represents about 27 p.c. of the value of Canada's export trade.

The predominant part played by the pulp and paper, lumber and other forest products industries in the development of the country and in its current economy has resulted in a widespread tendency to evaluate the forest in terms of timber alone. But equally important is the fact that the existence of widespread forest cover, productive or unproductive in the sense of human utilization, remains essential to the maintenance of the balance of nature—in protecting water-catchment areas and assuring supplies of water, in lowering the temperature, reducing the velocity of the wind and protecting the land against drought and erosion, and in providing shelter for birds and animals. It is reassuring that a growing realization of the economic importance of the forest for its non-commercial values, including recreation and wildlife and watershed protection, is bringing about increasing recognition of the true value of the forest and is thus developing a broader concept of forestry.

### Section 1.—Forest Resources

**Forest Regions.**†—The forests of Canada cover a vast area in the north temperate climatic zone but wide variations in physiographic soil and climatic conditions cause marked

\* Sections of this Chapter that deal with forest resources and depletion and the federal forestry program were revised by the Department of Forestry and Rural Development, Ottawa. Provincial forestry programs were prepared by the forestry officials of the respective provincial governments. Sections dealing with forest and allied industries, except as otherwise noted, were revised in the Forestry Section, Industry Division, Dominion Bureau of Statistics.

† A more detailed discussion of forest regions is given in Bulletin 123, *Forest Regions of Canada*, published by the Department of Forestry and Rural Development.

differences in their character in different parts of the country; hence, eight fairly well-defined forest regions may be recognized. These regions, with the relative proportion of the total area of all forest regions occupied by each, are as follows:—

Region	Percentage of Forest Area	Region	Percentage of Forest Area
Boreal.....	82.1	Acadian.....	2.0
Great Lakes-St. Lawrence.....	6.5	Columbia.....	0.8
Subalpine.....	3.7	Deciduous.....	0.4
Montane.....	2.3		
Coast.....	2.2	TOTAL.....	100.0

*Boreal Forest Region.*—This Region comprises the greater part of the forest area of Canada, forming a continuous belt from Newfoundland and the Labrador coast westward to the Rocky Mountains and northwestward to Alaska. The white and the black spruces are characteristic species; other prominent conifers are tamarack which ranges throughout, balsam fir and jack pine in the eastern and central portions, and alpine fir and lodgepole pine in the western and northwestern parts. Although the forests are primarily coniferous, there is a general admixture of broadleaved trees such as the white birches and poplars; these are important in the central and south-central portions, particularly in the zone of transition to the prairie. In turn, the proportion of spruce and tamarack rises northward and, with increasingly rigorous climatic conditions, the close forest gives way to the open lichen-woodland which finally merges into tundra. In the east there is, along the southern border of the Region, a considerable intermixture of species from the Great Lakes-St. Lawrence Forest such as the white and the red pines, yellow birch, sugar maple, black ash and eastern white cedar.

*Great Lakes-St. Lawrence Forest Region.*—Along the Great Lakes and the St. Lawrence River Valley lies a forest of a very mixed nature, characterized by the white and the red pines, eastern hemlock and yellow birch. With these are associated certain dominant broadleaved species common to the Deciduous Forest Region, such as sugar maple, red maple, red oak, basswood and white elm. Other species with wide range are the eastern white cedar and largetooth aspen and, to a lesser extent, beech, white oak, butternut and white ash. Boreal species, such as the white and the black spruces, balsam fir, jack pine, poplars and white birch, are intermixed and, in certain humid portions of the east, red spruce is abundant.

*Subalpine Forest Region.*—This is a coniferous forest found on the mountain uplands in Western Canada. It extends northward to the major divide separating the drainage of the Skeena, Nass and Peace Rivers on the south and to that of the Stikine and Liard Rivers on the north. The presence of the black and the white spruces plus aspen and birch indicates a close relationship with the Boreal Region, and the characteristic species—Engelmann spruce, alpine fir and lodgepole pine—have boreal counterparts. There is some entry of blue Douglas fir from the Montane Forest and of western hemlock, western red cedar and amabilis fir from the Coast Forest. Other species found are western larch, whitebark pine, limber pine and, on the coastal mountains, yellow cedar and mountain hemlock.

*Montane Forest Region.*—The Region occupies a large part of the interior uplands of British Columbia as well as a part of the Kootenay Valley and a small area on the east side of the Rocky Mountains. It is a northern extension of the typical forest of much of the western mountain system in the United States and comes in contact with the Coast, Columbia and Subalpine Forests. Ponderosa pine is a characteristic species of the southern portions. Blue Douglas fir is found throughout but more particularly in the central and southern parts; lodgepole pine and aspen are generally present, the latter being particularly

well represented in the north-central portions. Engelmann spruce and alpine fir from the Subalpine Region together with white birch are important constituents in the northern parts. The white spruce, though primarily boreal in affinity, is also present here. Extensive prairie communities of bunch-grasses and forbs are found in many of the river valleys.

*Coast Forest Region.*—This is part of the Pacific Coast forest of North America. Essentially coniferous, it consists principally of western red cedar and western hemlock with abundant Sitka spruce in the north and with the addition of Douglas fir in the south. Amabilis fir and yellow cedar occur widely and, together with mountain hemlock and alpine fir, are common toward the timber-line. Western white pine is found in the southern parts and western yew is scattered throughout. Broadleaved trees, such as black cottonwood, red alder and broadleaf maple, have a limited distribution. Arbutus and Garry oak, species whose centres of population lie southward in the United States, occur in Canada only on the southeast coast of Vancouver Island and the adjacent islands and mainland.

*Acadian Forest Region.*—Over the greater part of the Maritime Provinces, exclusive of Newfoundland, there is a forest closely related to the Great Lakes-St. Lawrence Region and, to a lesser extent, to the Boreal Region. Red spruce is a characteristic though not exclusive species and associated with it are balsam fir, yellow birch and sugar maple, with some red pine, white pine and hemlock. Beech was once an important forest constituent but the beech bark disease has drastically reduced its abundance in Nova Scotia, Prince Edward Island and southern New Brunswick. Other species of wide distribution are the black and the white spruces, red oak, white elm, black ash, red maple, white birch, wire birch and the poplars. Eastern white cedar, though present in New Brunswick, is extremely rare elsewhere and jack pine is apparently absent from the upper St. John Valley and the western half of Nova Scotia.

*Columbia Forest Region.*—A large part of the Kootenay River Valley, the upper valleys of the Thompson and Fraser Rivers and the Quesnel Lake area of British Columbia contain a coniferous forest closely resembling that of the Coast Region. Western red cedar and western hemlock are the characteristic species in this interior "wet belt". Associated trees are the blue Douglas fir which is of general distribution and, in the southern parts, western white pine, western larch, grand fir and western yew. Engelmann spruce from the Subalpine Region is important in the upper Fraser Valley and is found to some extent at the upper levels of the forest in the remainder of the Region. At lower elevations in the west and in parts of the Kootenay Valley the forest grades into the Montane Region and, in a few places, into prairie grasslands.

*Deciduous Forest Region.*—A small portion of the deciduous forest, widespread in the eastern United States, occurs in southwestern Ontario between Lakes Huron, Erie and Ontario. Here, with the broadleaved trees common to the Great Lakes-St. Lawrence Region, such as sugar maple, beech, white elm, basswood, red ash, white oak and butternut, are scattered a number of other broadleaved species which have their northern limits in this locality. Among these are the tulip-tree, cucumber-tree, papaw, red mulberry, Kentucky coffee-tree, redbud, black gum, blue ash, sassafras, mockernut and pignut hickories, and scarlet, black and pin oaks. In addition, black walnut, sycamore and swamp white oak are confined largely to this Region. Conifers are few and there is only a scattered distribution of white pine, tamarack, red juniper and hemlock.

*Forest Land.*—The forest area of Canada is estimated at 1,710,788 sq. miles, about 57 p.c. of which is "productive" in the sense that it is capable of producing merchantable timber; the remainder is incapable of producing merchantable timber because of adverse climatic, soil or moisture conditions or is reserve forest land for which no inventories are available. Table 1 shows the areas of productive and non-productive forest land in each province and territory; forest land in each province classified by type of growth is given in Chapter X at p. 441.



## 1.—Productive and Non-productive Forest Land, by Province

Province or Territory	Productive Forest Land	Non-productive Forest Land	Total
	sq. miles	sq. miles	sq. miles
Newfoundland.....	33,862	53,930	87,792
Prince Edward Island.....	813	121	934
Nova Scotia.....	15,080	1,194	16,274
New Brunswick.....	23,887	442	24,329
Quebec.....	220,625	157,500	378,125
Ontario.....	164,568	97,174	261,742
Manitoba.....	58,189	64,632	122,821
Saskatchewan.....	50,239	67,499	117,738
Alberta.....	116,572	41,023	157,595
British Columbia.....	208,411	59,227	267,638
<b>Totals, Provinces.....</b>	<b>892,246</b>	<b>542,742</b>	<b>1,434,988</b>
Yukon Territory.....	42,100	39,100	81,200
Northwest Territories.....	33,600	161,000	194,600
<b>Canada.....</b>	<b>967,946</b>	<b>742,842</b>	<b>1,710,788</b>

With help from the Federal Government, inventories of the forest resources are made periodically by provincial forest authorities and, with their co-operation, the federal Department of Forestry and Rural Development compiles the national forest inventory (see p. 447). The latest estimates of the total stand of timber, by province and region, appear in Table 2. These estimates are subject to constant revision as more accurate and complete inventories are compiled.

## 2.—Estimate of Standing Timber, by Type and Size and by Province and Region

Province and Region	Coniferous			Broadleaved			Totals		
	Large Material <sup>1</sup>	Small Material <sup>2</sup>	Total	Large Material <sup>1</sup>	Small Material <sup>2</sup>	Total	Large Material <sup>1</sup>	Small Material <sup>2</sup>	Total
	Million cu. ft.	'000 cords	Million cu. ft.	Million cu. ft.	'000 cords	Million cu. ft.	Million cu. ft.	'000 cords	Million cu. ft.
Newfoundland.....	2,125	136,400	13,719	244	3,922	577	2,369	140,322	14,296
Labrador.....	1,105	70,000	7,055	77	2,353	277	1,182	72,353	7,332
Island.....	1,020	66,400	6,664	167	1,569	300	1,187	67,969	6,964
Prince Edward Island...	20	1,829	175	7	800	75	27	2,629	250
Nova Scotia.....	2,149	50,824	6,469	1,529	20,988	3,312	3,678	71,812	9,782
New Brunswick.....	4,300	89,978	11,948	2,652	26,713	4,923	6,952	116,691	16,871
<b>TOTALS, ATLANTIC PROVINCES.....</b>	<b>8,594</b>	<b>279,031</b>	<b>32,311</b>	<b>4,432</b>	<b>52,423</b>	<b>8,888</b>	<b>13,026</b>	<b>331,454</b>	<b>41,199</b>
Quebec.....	59,702	290,220	84,371	17,472	73,985	23,761	77,174	364,205	108,132
Ontario.....	21,584	530,236	66,654	25,466	228,825	44,916	47,050	759,061	111,570
<b>TOTALS, CENTRAL PROVINCES.....</b>	<b>81,286</b>	<b>820,456</b>	<b>151,025</b>	<b>42,938</b>	<b>302,810</b>	<b>68,677</b>	<b>124,224</b>	<b>1,123,266</b>	<b>219,702</b>
Manitoba.....	1,863	92,498	9,725	1,065	24,188	3,121	2,928	116,686	12,846
Saskatchewan.....	1,742	128,686	12,681	3,174	84,909	10,391	4,916	213,595	23,072
Alberta.....	13,241	207,720	30,897	12,343	137,885	24,063	25,584	345,605	54,960
<b>TOTALS, PRAIRIE PROVINCES.....</b>	<b>16,846</b>	<b>428,904</b>	<b>53,303</b>	<b>16,582</b>	<b>246,982</b>	<b>37,575</b>	<b>33,428</b>	<b>675,886</b>	<b>90,878</b>
British Columbia.....	292,020	766,021	357,132	14,337	64,119	19,787	306,357	830,140	376,919
Yukon Territory.....	926	76,000	7,386	180	18,700	1,770	1,106	94,700	9,156
Northwest Territories...	600	112,000	10,120	424	41,000	3,909	1,024	153,000	14,029
<b>Canada.....</b>	<b>400,272</b>	<b>2,482,412</b>	<b>611,277</b>	<b>78,893</b>	<b>726,034</b>	<b>140,606</b>	<b>479,165</b>	<b>3,208,446</b>	<b>751,883</b>

<sup>1</sup> Ten inches D.B.H. or over (suitable for saw timber).<sup>2</sup> Four to nine inches (units of 85 cu. ft.).

*Tenure of Forest Land.*—Corporations and private individuals own 9 p.c. of the productive forest land of Canada and 91 p.c. is in the possession of the Crown in the right of the federal or the provincial governments. Rights to cut Crown timber under lease or licence have been granted on 23 p.c. of the productive forest land; the remainder comprises unalienated productive forest areas and federal lands such as Indian reserves, military reserves, etc.

Woodlots on the 480,903 farms (1961) across the country comprise about 3 p.c. of the total productive forest. These small wooded tracts, ranging in size from three or four acres to 200 or more acres, are among the most accessible forests in Canada. Also, the woodlots of Eastern Canada are, in general, highly productive because they lie in the southern part of the country and frequently occupy soils that are considerably higher in quality than those typical of the northern forests.

### 3.—Tenure of Occupied Productive Forest Land, by Province

(Net area in sq. miles)

Province or Territory	Provincial Crown Land			Federal Crown Land	Privately Owned Land			Total Occupied Productive Forest Land
	Leases and Licences	Permits and Sales	Total	Total	Farm Woodlots	Other	Total	
Newfoundland.....	25,976	—	25,976	—	31	1,715	1,746	27,722
Labrador.....	19,219	—	19,219	—	—	—	—	19,219
Island.....	6,757	—	6,757	—	31	1,715	1,746	8,503
Prince Edward Island.....	—	—	—	3	417	388	805	808
Nova Scotia.....	1,148	19	1,167	31	2,130	9,525	11,655	12,853
New Brunswick.....	10,403	—	10,403	413	1,923	10,459	12,382	23,198
Quebec.....	77,805	—	77,805	225	6,678	18,436	25,114	103,144
Ontario.....	83,903	—	83,919 <sup>1</sup>	96	5,086	11,105	16,191	100,206
Manitoba.....	1,488	600	2,088	320	2,327	1,489	3,816	6,224
Saskatchewan.....	1,815	1,000	2,815	592	2,216	2,081	4,297	7,704
Alberta.....	7,659	—	7,659	1,631	3,317	—	3,317	12,607
British Columbia.....	3,834	2,344	6,178	920	1,147	9,141	10,288	17,386
Yukon Territory.....	—	—	—	25	2	—	2	27
Northwest Territories.....	—	—	—	2	—	—	—	2
<b>Canada.....</b>	<b>214,031</b>	<b>3,963</b>	<b>218,010<sup>1</sup></b>	<b>4,258<sup>2</sup></b>	<b>25,274</b>	<b>64,339</b>	<b>89,613</b>	<b>311,881</b>

<sup>1</sup> Includes 16 sq. miles of "other" provincial Crown land. <sup>2</sup> Of this total, 320 sq. miles are under lease or licence—293 sq. miles in Alberta, the 25 sq. miles in the Yukon Territory, and the 2 sq. miles in the Northwest Territories.

**Canada's Forest Trees.\***—There are more than 150 tree species in Canada, of which 31 are conifers or 'softwoods'. About two thirds of these softwoods and one tenth of the large number of the deciduous or 'hardwood' species are of commercial value.

The spruces are the most important forest trees in Canada. Although red spruce is found only in Eastern Canada, and Sitka and Engelmann only in the far west, black spruce and white spruce are found from the Atlantic almost to the Pacific, and northward to Alaska. About one third of Canada's timber volume is spruce. The wood is used for pulpwood, lumber and plywood.

\* Prepared by John W. Ker, Professor of Forestry, University of New Brunswick; reproduced courtesy Timberjack Machines Limited. The dominant species existing in each forest region are given on pp. 508-510 and detailed information is contained in Department of Forestry and Rural Development Bulletin No. 61, *Native Trees of Canada*.

Second only to the spruces are the two-needled pines—jack pine, which grows from Nova Scotia to northern Alberta and the Northwest Territories, and lodgepole pine in western Alberta, British Columbia and Yukon Territory. These pines comprise 11 p.c. of Canada's standing timber volume.

Third in importance are the true firs, of which the most widely distributed is the balsam fir, found from the Atlantic seaboard west to north-central Alberta. In the far west are three species: grand fir, which grows on the southern coast of British Columbia and in the southern interior; amabilis fir, found at intermediate levels on the coast; and alpine fir, which grows in the mountains and interior of British Columbia, the foothills of Alberta and southern Yukon Territory. The wood is commonly cut as pulpwood and, to a lesser extent, as sawlogs.

Next in abundance is a family of eight broadleaved deciduous trees: the trembling aspen, largetooth aspen, balsam poplar and five cottonwoods—the eastern, black, lanceleaf, narrowleaf and plains cottonwood. The most widely distributed is the trembling aspen, followed by the balsam poplar. The black cottonwood reaches the largest size in this family. In demand for veneer stock, this species and its hybrids will yield large wood volumes per acre on short rotations under intensive management. The other species in this group are used in the manufacture of excelsior and soda pulp.

Fifth among Canada's forest trees is the hemlock. Three species are native to Canada: eastern hemlock grows in the Maritimes, southern Quebec and Ontario; western hemlock at lower and intermediate levels throughout the coastal and interior wet belts of British Columbia; and mountain hemlock at higher elevations in the southern mountains of British Columbia, growing down to sea level on wet, exposed sites on the northern coast and the panhandle of Alaska. Western hemlock is a valuable pulpwood species. Eastern hemlock is a main commercial source of tannin and the wood is used for railway ties, wood-stave pipe, lumber and pulp. Mountain hemlock is not important as a timber species.

The tree responsible more than any other for British Columbia's world-wide reputation for timber is the coastal form of the Douglas fir, which is dominant in the forests of the south coast and the southeastern half of Vancouver Island. An interior form, the blue Douglas fir, is widely distributed throughout the Rocky Mountain system. Douglas fir is used extensively for lumber, plywood, construction timbers, piling and kraft pulp.

Next in order are the cedars, including arborvitae and yellow cedar. The eastern white cedar is found from western Nova Scotia to Manitoba; its wood is light and resistant to decay. The western red is of prime importance to British Columbia. In virgin forests, it attains heights of 150 to 200 feet and diameters of 8 to 10 feet. It is used for lumber, hand-split shakes, shingles, poles and posts. At higher altitudes on the British Columbia coast, the red cedar is replaced by the yellow cedar. The wood of this species also resists decay and is prized for boat-building and interior finishing. It is useful for poles, piling and as battery separators.

Finally, there are the birches. Most abundant is the white birch which grows widely throughout Canada. Western white birch is a large tree, reaching heights of 100 feet and diameters of 3 to 4 feet. It is found in northern and western Alberta, in British Columbia and also on the Atlantic Coast in the east. However, the most important hardwood tree in Eastern Canada is the yellow birch, which grows in southern Newfoundland, the Maritimes, Quebec and Ontario. Its wood is much in demand for flooring, furniture, veneer and railroad ties.

Canada is indeed fortunate to possess such a diversity of useful tree species. The white pine and spruce in the east, and Douglas fir, western red cedar and western hemlock in British Columbia have won for Canada its enviable position as the world's leading nation in forest products trade.



## Section 2.—Forest Depletion

General information on forest depletion and increment as well as statistics on forest fires and fire losses are presented in this Section. The scientific control of the influences that account for wastage, such as forest fires, insect pests, etc., is dealt with in Section 4.

The latest information available on the rate and cause of depletion of reserves of merchantable timber is given in Table 4. Of the total depletion of the forests in the ten year period 1953-62, 86 p.c. was utilized and 14 p.c. was destroyed by fire. (Information on the extent of damage caused by agencies other than fire, such as insects, disease and natural mortality, is not available. Losses from insects and diseases alone are estimated to be in excess of 1,000,000 M cu. ft. of merchantable timber annually.) The average annual utilization of 3,232,353 M cu. ft. comprised 50 p.c. logs and bolts, 40 p.c. pulpwood, over 8 p.c. fuelwood and almost 2 p.c. other products. A little over 4 p.c. of the total utilization was exported in the form of logs and bolts and pulpwood.

The productive forests of Canada covering an area of 967,946 sq. miles constitute the reserve from which forest production will be obtained for many years to come. The supply of merchantable timber on this area is estimated at 751,883,000 M cu. ft. and the average annual utilization in 1953-62 of 3,232,353 M cu. ft. therefore represented less than one half of one per cent of the supply. However, it should be noted that utilization does not occur evenly throughout the productive forest area but is concentrated on the relatively small area of occupied forest land (land under lease, licence or private ownership). Thus, overcutting may occur on many of these occupied areas, emphasizing the need for orderly management of all commercial forests if the forest industries are to maintain their important position in the Canadian economy. Also, efficient utilization of cut timber is an important factor related to forest depletion.

### 4.—Forest Utilization and Depletion, Ten-Year Average 1953-62

Item	Usable Wood	Percentage of Total Depletion
	M cu. ft.	
<b>Products Utilized—</b>		
Logs and Bolts—		
Domestic use.....	1,608,424	42.8
Exported.....	8,399	0.2
Pulpwood—		
Domestic use.....	1,152,597	30.7
Exported.....	128,933	3.4
Fuelwood.....	276,731	7.4
Other products.....	56,269	1.5
<b>Totals, Utilization.....</b>	<b>3,232,353</b>	<b>86.0</b>
<b>Wastage—</b>		
By forest fires.....	526,220	14.0
<b>Totals, Depletion.....</b>	<b>3,758,573</b>	<b>100.0</b>

**Forest Fire Statistics.**—There were 6,944 forest fires in Canada during 1964, 10 p.c. fewer than in 1963. Although the area burned over was more than six times larger than that burned in the previous year, only a little over one fifth of it was classed as merchantable timber land; the amount of saw timber lost was actually lower than in 1963 and amounted to only 5.8 p.c. of the 1954-63 average. The amount of small material lost was more than four times higher than in 1963 and was also considerably higher than the ten-year average. In monetary terms, the estimated total damage was almost 53 p.c. higher than in 1963 but was less than half the ten-year average.

## 5.—Forest Fire Losses, 1963 and 1964, compared with Ten-Year Average 1954-63

Item	Average 1954-63	1963	1964
<b>Totals, Fires</b> ..... No.	<b>6,142</b>	<b>7,670</b>	<b>6,944</b>
Fires under 10 acres.....	5,036	6,545	5,784
Fires 10 acres or over.....	1,106	1,125	1,160
<b>Area Burned</b> ..... acres	<b>2,388,025</b>	<b>470,001</b>	<b>2,993,290</b>
Merchantable timber.....	566,824	97,783	683,826
Young growth.....	509,557	114,336	634,179
Cut-over lands.....	317,216	63,465	32,082
Non-forested lands.....	994,428	194,417	1,643,203
<b>Average Size of Fire</b> ..... acres	<b>389</b>	<b>61</b>	<b>431</b>
<b>Merchantable Timber Burned—</b>			
Saw timber..... M ft. b.m.	1,358,301	124,059	78,291
Small material..... cords	2,921,547	743,150	3,209,499
<b>Estimated Values Destroyed:</b> ..... \$	<b>13,605,475</b>	<b>4,265,926</b>	<b>6,522,947</b>
Merchantable timber.....	9,401,355	2,640,283	4,715,002
Young growth.....	2,655,960	785,651	1,222,675
Cut-over lands.....	429,083	221,464	96,766
Other property burned.....	1,119,077	618,528	488,504
<b>Actual Cost of Fire Fighting</b> ..... \$	<b>5,661,610</b>	<b>4,772,714</b>	<b>4,430,041</b>
<b>Totals, Damage and Fire Fighting Cost</b> ..... \$	<b>19,267,085</b>	<b>9,038,640</b>	<b>10,952,988</b>
<b>Area under protection</b> ..... sq. miles	..	1,402,185	1,514,924

<sup>1</sup> Figures do not include such values as damage to soil, stream-flow, wildlife, recreation and tourist facilities.

## 6.—Forest Fire Losses, by Province or Area, 1963 and 1964, compared with Ten-Year Average 1954-63

Province or Federal Lands	Average 1954-63			1963			1964		
	Fires	Area Burned	Fire Fighting Cost and Damage	Fires	Area Burned	Fire Fighting Cost and Damage	Fires	Area Burned	Fire Fighting Cost and Damage
	No.	acres	\$	No.	acres	\$	No.	acres	\$
<b>Province—</b>									
Newfoundland....	196	121,471	939,446	109	5,196	26,922	131	358,215	1,758,489
Prince Edward Island.....	1	1	1	1	1	1	1	1	1
Nova Scotia.....	374	7,553	106,909	376	2,299	22,552	562	8,739	59,204
New Brunswick..	272	12,647	206,967	376	2,388	38,885	512	5,770	96,729
Quebec.....	811	158,947	2,446,850	1,172	96,220	3,566,242	1,157	71,118	1,999,570
Ontario.....	1,408	205,197	5,362,601	1,885	56,138	1,831,430	1,829	28,124	1,243,675
Manitoba.....	356	503,029	1,194,138	443	70,477	188,912	581	836,278	1,182,812
Saskatchewan....	228	283,758	809,693	255	141,507	772,746	460	1,174,174	1,893,394
Alberta.....	380	159,471	2,729,676	554	17,609	1,466,334	361	18,007	1,141,877
British Columbia.	1,922	453,737	4,741,443	2,345	46,346	975,156	1,120	7,746	298,776
<b>Federal Lands—</b>									
Yukon									
Territory.....	62	191,194	276,392	44	11,679	55,615	25	480	4,019
Northwest Territories.....	78	284,413	410,050	69	19,897	89,194	162	470,484	1,192,737
National Parks..	36	5,999	40,325	29	186	3,854	25	12,819	49,702
Indian lands.....	2	2	2	2	2	2	2	2	2
Other federal lands (incl. military areas).	19	609	2,595	13	59	798	19	1,336	32,004

<sup>1</sup> Not reported.

<sup>2</sup> Included in provincial figures.

In 1964, lightning accounted for 29 p.c. of all forest fires and 80 p.c. of the total area burned. Thus, almost three quarters of the fires but only one fifth of the area burned were ascribed to human error. Recreationists were responsible for the greatest proportion of man-caused fires.

## 7.—Forest Fires, by Cause, 1963 and 1964

Cause	1963		1964		Cause	1963		1964	
	No.	p.c.	No.	p.c.		No.	p.c.	No.	p.c.
Recreation.....	2,080	27	1,617	23	Unknown.....	240	3	391	6
Settlement.....	864	11	959	14	<b>Totals, Man-Caused.....</b>	<b>5,319</b>	<b>69</b>	<b>4,955</b>	<b>71</b>
Woods operations....	124	2	217	3	Lightning.....	2,351	31	1,989	29
Railways.....	231	3	220	3	<b>Totals, All Fires.....</b>	<b>7,670</b>	<b>100</b>	<b>6,944</b>	<b>100</b>
Other industries....	417	6	238	3					
Incendiary.....	323	4	381	6					
Miscellaneous known.	1,040	13	932	13					

## Section 3.—Statistics of Forest and Allied Industries

This Section is concerned with the many industries engaged in the felling of timber and its transformation into a great variety of products required in modern living. The extensive forests of Canada provide raw materials for several large and growing primary industries, i.e., the sawmills and planing mills, the shingle mills, the veneer and plywood mills, the particle board plants and the pulp and paper mills, which in their turn provide raw materials for a wide range of secondary industries that convert the products of the primary industries into more highly manufactured goods such as sash, doors, mill work, wooden boxes, furniture, converted papers and paper goods, etc. However, much of the output of the primary forest industries is exported; the sawmill industry and the pulp and paper industry, especially, contribute substantially to the value of the export trade of Canada and thereby provide an important part of the foreign exchange necessary to pay for the imports from other countries.

Statistics of manufacturing activity and total activity of the wood industries and the paper and allied industries may be found in a number of tables in Chapter XVI on Manufactures. These statistics and those included in the tables of this Section are based on the revised standard industrial classification and the new establishment concept, explained in Chapter XVI.

## Subsection 1.—Woods Operations

The forests of Canada provide the raw materials for its sawmills and planing mills, shingle mills, veneer and plywood mills, particle board plants and pulp and paper mills as well as roundwood for export in unmanufactured state and other products such as fuelwood, poles and piling, fence posts, mining timber, Christmas trees, etc. Tables 8 and 9 give the estimated quantities of wood cut in Canada by province and by type of product.

## 8.—Volume of Wood Cut, by Province, 1959-63

Province or Territory	1959	1960	1961	1962	1963
	M cu. ft.	M cu. ft.	M cu. ft.	M cu. ft.	M cu. ft.
Newfoundland.....	96,695	126,702	98,014	74,649	89,027
Prince Edward Island.....	10,594	10,834	10,157	5,514	6,045
Nova Scotia.....	89,612	98,095	96,747	81,907	86,554
New Brunswick.....	172,602	187,297	193,346	140,627	198,258
Quebec.....	877,158	879,914	914,096	876,043	913,542
Ontario.....	531,528	541,329	494,048	519,414	535,077
Manitoba.....	51,766	45,255	37,602	53,160	41,556
Saskatchewan.....	44,621	49,860	44,036	47,844	42,091
Alberta.....	135,003	148,485	118,390	131,706	133,472
British Columbia.....	1,173,965	1,337,997	1,295,038	1,496,832	1,621,649
Yukon and Northwest Territories.....	2,843	5,697	1,815	4,106	3,965
<b>Canada.....</b>	<b>3,186,387</b>	<b>3,431,465</b>	<b>3,303,289</b>	<b>3,431,802</b>	<b>3,671,234</b>



## 9.—Volume of Wood Cut, by Type of Product, 1961-63

Type of Product	1961		1962		1963	
	Quantity Reported or Estimated	Equivalent Volume in M cu. ft. <sup>1</sup>	Quantity Reported or Estimated	Equivalent Volume in M cu. ft. <sup>1</sup>	Quantity Reported or Estimated	Equivalent Volume in M cu. ft. <sup>1</sup>
Logs and bolts..... M ft. b.m.	8,800,339	1,684,991	9,934,202	1,894,740	10,903,237	2,083,854
Pulpwood..... cord	15,474,266	1,315,314	14,624,151	1,243,052	15,511,520	1,318,479
Fuelwood..... "	2,993,845	239,508	2,816,193	225,296	2,643,700	210,896
Poles and piling..... M cu. ft.	24,820	24,820	25,887	25,887	18,881	18,881
Round mining timber..... cord	77,394	6,578	67,479	5,716	64,694	5,498
Fence posts..... No.	10,453,678	12,545	13,481,772	16,178	18,797,800	22,557
Fence rails..... "	769,345	770	894,063	894	732,550	733
Wood for charcoal..... cord	38,750	3,100	39,500	3,160	46,000	3,680
Miscellaneous roundwood... M cu. ft.	15,663	15,663	16,879	16,879	6,658	6,658
<b>Totals.....</b>	<b>...</b>	<b>3,303,239</b>	<b>...</b>	<b>3,431,802</b>	<b>...</b>	<b>3,671,236</b>

<sup>1</sup> In estimating the annual cut, certain factors have been used to convert commercial units to cubic feet. The factor for logs and bolts for the British Columbia coastal region is 175 cu. ft. per M ft. b.m. logscale and for the remainder of Canada 200; the factor for rough pulpwood and round mining timber is 85, for fuelwood and wood for charcoal 80, fence posts 1.2 and fence rails 1.

## Subsection 2.—Wood Industries

The standard industrial classification subdivides the wood industries group into the following industries: sawmills and planing mills, shingle mills, veneer and plywood mills, sash, door and other millwork plants, hardwood flooring mills, wooden box factories, the coffin and casket industry and miscellaneous wood industries. The latter item is further subdivided into the wood preservation industry, the wood handles and turning industry, the woodenware industry, the cooperage industry and miscellaneous wood industries, *n.e.s.*

The sawmills and planing mills, the shingle mills, the veneer and plywood mills and the particle board plants (the latter are included in the miscellaneous wood industries, *n.e.s.* group) mainly use roundwood as a raw material and sometimes are called primary wood industries and are dealt with separately below. The other industries, which constitute the secondary wood industries, further manufacture part of the production of the primary wood industries into a great variety of products. However, most of the production of the primary wood industries is not further processed.

**Sawmill and Planing Mill Industry.**—Lumber is by far the most important single product of this industry and, as shown in Table 10, British Columbia is the most important province in this field. It should also be noted that the shipment figures of Tables 10 and 11 contain a certain element of duplication because sales of lumber from one sawmill to another will be reported as shipments by both establishments. Similar situations occur in most industries to a greater or lesser extent.

In addition to the lumber produced by the sawmill and planing mill industry, a small amount is produced by establishments classified to other industries, bringing total lumber production in Canada in 1964 to 10,363,564 M ft.b.m.

### 10.—Lumber Production and Shipments and Value of All Shipments of the Sawmill and Planing Mill Industry, by Province, 1964

Province or Territory	Lumber			Value of Shipments of Goods of Own Manufacture
	Production	Quantity Shipped	Value of Shipments	
	M ft. b.m.	M ft. b.m.	\$'000	\$'000
Newfoundland.....	16,847	20,957	1,598	1,897
Prince Edward Island.....	5,482	2,270	152	220
Nova Scotia.....	203,452	175,778	12,779	15,761
New Brunswick.....	352,427	332,135	25,031	32,561
Quebec.....	1,373,982	1,264,293	95,233	116,807
Ontario.....	753,453	689,552	61,084	74,358
Manitoba.....	22,145	22,495	1,306	1,836
Saskatchewan.....	54,982	76,264	4,786	5,912
Alberta.....	351,179	408,883	22,100	26,598
British Columbia.....	6,913,630	7,424,458	506,204	578,735
Yukon and Northwest Territories.....	9,452	7,440	597	650
<b>Canada .....</b>	<b>10,060,031</b>	<b>10,424,525</b>	<b>730,870</b>	<b>855,335</b>

### 11.—Quantity and Value of Lumber Shipments of the Sawmill and Planing Mill Industry, by Species, 1964

Kind of Wood	Quantity	Value	Kind of Wood	Quantity	Value
	M ft. b.m.	\$'000		M ft. b.m.	\$'000
Spruce.....	3,993,135	249,080	Yellow birch.....	139,483	16,643
Douglas fir.....	2,246,785	156,816	Maple.....	152,903	16,953
Hemlock.....	1,783,355	126,649	Lodgepole pine.....	305,206	16,096
Cedar.....	714,122	62,637	Other.....	319,840	25,070
White pine.....	313,899	30,403			
Balsam fir.....	179,559	11,893			
Jack pine.....	276,238	18,628			
			<b>Totals.....</b>	<b>10,424,525</b>	<b>730,870</b>

**Shingle Mill Industry.**—Most of the shingles and shakes produced in Canada are from British Columbia mills. All establishments classified to this industry reported, for the year 1964, shipments of 1,913,934 squares of shingles and shakes valued at \$24,462,000, of which British Columbia accounted for 1,894,216 squares valued at \$24,301,000. However, it should be mentioned that considerable quantities are produced by establishments classified to other industries and by individuals intermittently operating one or two shingle machines or producing by hand; although no adequate measure of this production is available, it is known to contribute significantly to the total. Of the total production in 1964, 2,558,511 squares were exported, 2,503,290 squares going to the United States.

**Veneer and Plywood Industry.**—The production of hardwood veneer and plywood in Canada is confined largely to the eastern provinces and the production of softwood veneer and plywood almost entirely to British Columbia. For the latter, Douglas fir is most commonly utilized because of the availability of large diameter logs of this species from which large sheets of clear veneer can be obtained. Of the hardwoods, yellow birch is by far the most important species. Although most of the raw materials for this industry are of Canadian origin, some decorative woods are imported, particularly walnut.

About 30 p.c. of the shipments of veneer, shown in Table 12, are softwood veneers; most of these are further manufactured into plywood by Canadian mills, thus contributing to the shipments of plywood shown in the same table. Some of the hardwood veneers are also shipped to other veneer and plywood mills for further manufacture or to other industries such as the furniture industry for veneering purposes, but a significant portion is exported. Total exports in 1964 amounted to 830,917 M sq. ft. valued at \$28,811,000, of which 781,650 M sq. ft. valued at \$26,290,000 went to the United States.

Most of the plywood is consumed in Canada, although exports are not unimportant; in 1964 these amounted to 48,362 M sq. ft. of hardwood plywood valued at \$8,465,000 and 455,421 M sq. ft. of softwood plywood valued at \$29,385,000. The greater part of the exports of hardwood plywood went to the United States (45,251 M sq.ft. valued at \$7,554,000) but most of the softwood plywood exports went to Britain (406,770 M sq.ft. valued at \$26,338,000).

### 12.—Veneer and Plywood Shipments, by Type, 1962-64

Type	1962		1963		1964	
	Quantity	Value	Quantity	Value	Quantity	Value
	M sq. ft.	\$'000	M sq. ft.	\$'000	M sq. ft.	\$'000
Veneer.....	1,437,540 <sup>1</sup>	27,980	1,662,604 <sup>1</sup>	31,570	1,453,733 <sup>1</sup>	32,598
Softwood plywood.....	1,739,663 <sup>2</sup>	89,643	1,885,923 <sup>2</sup>	103,559	1,475,197 <sup>2</sup>	115,300
Hardwood plywood.....	322,441 <sup>2</sup>	34,020	364,090 <sup>2</sup>	37,430	372,008 <sup>2</sup>	38,090

<sup>1</sup> Surface measure.

<sup>2</sup>  $\frac{1}{4}$ " sanded basis.

<sup>3</sup>  $\frac{3}{8}$ " sanded basis.

### Subsection 3.—Paper and Allied Industries

The standard industrial classification subdivides the paper and allied industries group into the following industries: the pulp and paper industry, the asphalt roofing manufacturers, the paper box and bag manufacturers, and other paper converters. Statistics of manufacturing activity and total activity of the paper and allied industries group are given in Chapter XVI on Manufactures.

**Pulp and Paper Industry.**—This industry is by far the most important of the group. In fact, it has been for many years the leading industry in Canada, contributing over 4 p.c. of the total gross national product and almost 17 p.c. (1964) of the total value of the country's exports. Of the 131 pulp and paper mills in operation in 1964, 31 were making pulp only, 25 were making paper only and 75 were combined pulp and paper mills.

These mills consume enormous quantities of roundwood, 16,147,000 rough cords with a cost value of \$402,270,000 being so used in 1964. In that year, 114,000 cords of pulpwood were imported and 1,235,000 cords were exported. In addition, the pulp and paper mills use wood residues of the sawmill and other industries for pulping, such as cores of peeler logs, slabs and edgings or wood chips made thereof, shavings, etc., and recently even sawdust has been used successfully for this purpose. The total of such wood residues used by the industry in 1964 amounted to the equivalent of 3,500,000 rough cords of pulpwood, valued at \$68,710,000. The industry also consumes large amounts of electric power, chemicals and other goods and services and requires great quantities of clean water.

Some of the production of the pulp and paper industry is consumed in Canada or serves as a raw material for the paper-using or secondary paper and allied industries and certain other industries, but a great part of it is exported, particularly newsprint and various



types of pulp (see Table 15), most of it to the United States. Some plants included in the pulp and paper industry classification also convert basic paper and paperboard into more highly manufactured papers, paper goods and boards but their output represents only a small part of Canada's total production of converted papers and boards. Tables 13 and 14 give shipment and production figures for pulp and shipment figures for basic paper and paperboards for 1960-64, Table 15 shows exports of pulp and of newsprint to Britain, United States and all countries for 1960-65, and Tables 16 and 17 give world pulp and newsprint statistics for 1963 and 1964.

### 13.—Pulp Shipments and Production, 1960-64

Item	1960	1961	1962	1963	1964
<b>Mill Shipments of Pulp<sup>1</sup>.....'000 tons</b>	<b>3,084</b>	<b>3,335</b>	<b>3,690</b>	<b>4,023</b>	<b>4,412</b>
	<b>368,598</b>	<b>392,078</b>	<b>436,920</b>	<b>479,040</b>	<b>548,505</b>
Groundwood pulp.....'000 tons	267	260	287	287	321
	18,252	17,665	20,201	19,612	21,968
Chemical pulps.....'000 tons	2,795	3,048	3,377	3,708	4,062
	349,694	374,221	415,937	458,773	525,790
<b>Pulp Production<sup>2</sup>.....'000 tons</b>	<b>11,461</b>	<b>11,779</b>	<b>12,133</b>	<b>12,474</b>	<b>13,742</b>
Quebec....."	4,469	4,578	4,611	4,732	5,204
Ontario....."	2,967	2,981	3,052	3,074	3,317
British Columbia....."	2,124	2,256	2,411	2,501	2,827
Other provinces <sup>3</sup> ....."	1,901	1,964	2,059	2,167	2,393

<sup>1</sup> Includes screenings and unspecified pulps. <sup>2</sup> The differences between these figures and the quantities of mill shipments represent the amounts of pulp further manufactured by the reporting companies. <sup>3</sup> Prince Edward Island is the only province in which there is no production.

### 14.—Shipments of Basic Paper and Paperboard, by Type and by Province, 1960-64

Type and Province	1960	1961	1962	1963	1964
<b>Type</b>					
Newsprint paper.....'000 tons	6,773	6,674	6,648	6,639	7,377
	793,470	803,732	819,078	809,247	887,613
Book and writing paper.....'000 tons	401	417	434	460	491
	105,915	112,283	119,405	126,651	138,157
Wrapping paper.....'000 tons	301	309	323	334	340
	65,918	66,731	69,892	72,457	76,431
Paperboard.....'000 tons	973	1,018	1,092	1,214	1,297
	141,321	149,532	156,995	175,184	187,772
All other papers.....'000 tons	133	140	164	178	200
	21,247	24,132	25,128	27,375	34,138
<b>Totals.....'000 tons</b>	<b>8,581</b>	<b>8,558</b>	<b>8,661</b>	<b>8,825</b>	<b>9,705</b>
	<b>1,127,870</b>	<b>1,156,410</b>	<b>1,190,498</b>	<b>1,210,914</b>	<b>1,324,111</b>
<b>Province</b>					
Quebec.....'000 tons	3,703	3,726	3,765	3,798	4,236
	478,823	488,534	504,061	509,685	567,560
Ontario.....'000 tons	2,450	2,454	2,516	2,527	2,729
	352,183	357,714	376,444	384,603	411,691
British Columbia.....'000 tons	1,086	1,117	1,161	1,201	1,315
	132,193	150,778	157,097	155,599	169,468
Other provinces <sup>1</sup> .....'000 tons	1,342	1,261	1,219	1,299	1,425
	164,671	159,384	152,896	161,026	175,493

<sup>1</sup> Prince Edward Island is the only province in which there is no production.

### 15.—Exports of Pulp and of Newsprint to Britain, United States and All Countries, 1960-65

Commodity and Year	Britain		United States		All Countries	
	Quantity	Value	Quantity	Value	Quantity	Value
Pulp	tons	\$'000	tons	\$'000	tons	\$'000
1960.....	282,747	32,203	1,999,755	256,170	2,601,457	325,122
1961.....	278,846	31,023	2,176,585	268,949	2,868,844	346,661
1962.....	251,742	27,723	2,398,802	298,166	3,044,458	369,902
1963.....	279,834	31,621	2,505,669	309,915	3,339,492	405,292
1964.....	338,663	38,464	2,676,940	346,017	3,636,281	460,854
1965.....	347,167	40,404	2,812,616	370,380	3,852,650	493,501
Newsprint						
1960.....	460,537	60,163	5,229,909	631,230	6,190,286	757,930
1961.....	456,962	59,294	5,228,156	629,792	6,253,717	761,313
1962.....	431,822	63,452	5,227,006	633,037	6,148,294	753,060
1963.....	458,814	60,213	5,251,125	636,086	6,211,946	759,990
1964.....	480,332	61,791	5,675,627	689,406	6,815,629	834,646
1965.....	370,372	46,932	6,112,414	735,611	7,189,700	869,586

*World Pulp and Newsprint Statistics.*—Figures of production, exports and imports of pulp for certain countries of the world are shown for 1963 and 1964 in Table 16. It is estimated that these countries produce over three quarters of the world supply of pulp.

### 16.—Production, Exports and Imports of Pulp, by Leading Countries, 1963 and 1964

(SOURCE: FAO Year Book of Forest Products Statistics)

Country	1963			1964		
	Production	Exports	Imports	Production	Exports	Imports
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
Canada <sup>1</sup> .....	12,424	3,339	64	13,946	3,695	76
United States.....	29,427	1,422	2,776	32,255	1,605	2,989
Finland.....	5,317	2,135	47	5,970	2,380	3
Norway.....	1,757	863	56	2,014	978	50
Sweden.....	6,384	3,537	7	7,130	3,909	3

<sup>1</sup> Production figures differ slightly from DBS figures given in Table 13 because of a different basis of calculation.

Figures for the leading newsprint-producing countries for 1963 and 1964 are given in Table 17. The six countries listed accounted for over 71 p.c. of the estimated world production in 1964, Canada contributing over 41 p.c.

### 17.—Estimated World Newsprint Production and Exports, by Leading Countries, 1963 and 1964

(SOURCE: Newsprint Association of Canada)

Country	1963		1964	
	Production	Exports	Production	Exports
	'000 tons	'000 tons	'000 tons	'000 tons
Canada <sup>1</sup> .....	6,630	6,100	7,301	6,759
United States.....	2,218	118	2,261	117
Britain.....	753	26	840	19
Finland.....	1,009	907	1,074	988
Sweden.....	708	474	756	509
Norway.....	300	233	333	269

<sup>1</sup> Figures differ slightly from DBS figures given in Tables 14 and 15 because of different bases of calculation.

**Asphalt Roofing Manufacturers.**—These establishments produce composition roofing and sheathing, consisting of paper felt saturated with asphalt or tar and, in some cases, coated with a mineral surfacing. They also produce asphalt, vinyl-asbestos and pure vinyl floor tiles. Their total shipments in 1964 were valued at \$55,579,000.

**Paper Box and Bag Manufacturers.**—This industry includes manufacturers of folding cartons and set-up boxes, manufacturers of corrugated boxes and manufacturers of paper bags. Their total shipments in 1964 amounted, respectively, to \$136,801,000, \$179,183,000 and \$115,256,000.

**Other Paper Converters.**—This group produces a host of paper products such as envelopes, waxed paper, clay coated and enameled paper and board, aluminum foil laminated with paper or board, paper cups and food trays, facial tissues, sanitary napkins, paper towelling and napkins, toilet tissue, etc. The total value of manufacturing shipments of this industry in 1964 amounted to \$236,412,000.

## Section 4.—Forest Administration, Research and Conservation

### Subsection 1.—Federal Forestry Program

**Administration.**—The Federal Government is responsible through several departments and agencies for the protection and administration of the forest resources of the Yukon and Northwest Territories and of other federal lands such as the National Parks, Indian reserves, military areas and forest experiment stations.

The main forestry functions of the Department of Forestry and Rural Development\* (established as the Department of Forestry in 1960 and re-named in 1966) include: (1) provision for the conduct of research relating to the protection, management and utilization of the forest resources of Canada and the better utilization of forest products; (2) undertaking, promoting or recommending measures for the encouragement of public co-operation in the protection and wise use of the forest resources of Canada; (3) co-operating with provincial governments and others by means of agreements relating to forestry matters; (4) provision of forest surveys and advice relating to the protection and management of federally administered forest lands; and (5) assuming responsibility for forest protection and management on federal lands at the request of the department or agency concerned. The Act provides for the establishment of research facilities and of forest experimental areas on federal lands.

The Department maintains an Advisory Group to the Deputy Minister, whose main responsibilities are to develop policies and long-range plans for forest research, forest products research, forest economics and other such matters as federal-provincial relations and liaison with the forest industries and the academic community. A Directorate of Program Co-ordination provides national co-ordination of forestry research programs and supervises national research services at Ottawa. Research institutes and laboratories conduct fundamental research within prescribed fields, supporting and complementing the research programs carried out in seven administrative regions—Newfoundland, the Maritimes, Quebec, Ontario, Manitoba-Saskatchewan, Alberta-Yukon Territory-Northwest Territories, and British Columbia. Forest surveys are conducted on federal lands throughout the country and advice and assistance on forest management are given to the administering agencies. The Department also provides for the management of forests, including timber disposal, in certain areas on behalf of other government departments. Co-operation is extended to the External Aid Office in administering technical assistance programs involving forest surveys in other countries. The Department's public information program includes the issuing of publications designed to increase public awareness of

\* The Department of Forestry and Rural Development includes, under the administration of a separate Assistant Deputy Minister, a division responsible for rural development under authority of the Agricultural and Rural Development Act (ARDA) and the Maritime Marshland Rehabilitation Act, described at pp. 445-447; the administration of the Feed Grain Assistance Regulations, described at p. 462, is also a responsibility of the Department.



the importance of Canada's forest resources and the need for conserving them; the distribution of research publications and the interpretation of the scientific work of the Department to industry and to the general public; the dissemination of departmental and forestry information to the press, radio and television; the production of exhibits, displays and posters; and the maintenance of a photographic library dealing with forestry subjects.

The research functions of the Department and the Federal-Provincial Forestry Agreements program are described in the following paragraphs.

**Research on Silviculture, Tree Biology, Forest Soils and Fire.**—The objects of such research are (1) to provide basic information on the characteristic occurrence, growth, development and behaviour of forest tree species throughout the wide range of forest types and environmental conditions of Canada and (2) to develop and test new or improved methods for use in forest management and forest fire control. The programs are conducted throughout Canada, often in co-operation with other federal departments, provincial forest authorities, other research agencies, universities and industry.

Many of the silvicultural studies involve assessing the factors responsible for the success or failure of natural regeneration following various cutting methods and treatment of seedbeds, comparing different methods of seeding and planting, and determining the effects of different methods of intermediate cutting on the development of residual trees and stands. Studies are made of successional changes in most of the important forest types. Application of silvicultural techniques as well as research in regulation of cut and in methods of protection is aimed at determining how forests may be maintained at the highest levels of production. The relationships between forest growth and site are being studied with a view to the assessment of long-term productivity. The requirements of light, temperature and moisture that will produce optimum conditions for growth and development are being determined for seedlings. The physiological processes of growth and reproduction are under investigation for a limited number of species. In tree breeding, superior strains are selected or developed and there is a continual improvement in propagation and breeding techniques. Research in forest land encompasses forest geography and land classification. Research in soils is directed toward determining the relation of tree growth and nutrition to chemical and physical properties of the soil.

Techniques used to measure the volume, distribution and growth of the forest resource are constantly under review and study; new methods are tested and developed. Research in forest inventory methods is of increasing importance because of the continuing programs of forest inventories being conducted in most provinces and in the northern territories. Data from air photographs are correlated with field observations to develop new techniques for estimating timber. Research is continuing in methods for measuring tree images to determine heights, crown widths, canopy density and other data from photographs taken in different seasons under various conditions. The use of large-scale photography of sample areas is also being investigated and studies are being made in the identification of species and sub-types. Data on the growth and development of typical forest conditions are being collected on many thousands of semi-permanent sample plots.

Adequate protection of forests against fire is of vital importance in Canada. The Department works in full co-operation with provincial forest services in almost all phases of forest fire control and has made major contributions in the fields of forest fire danger measurement and forecasting and in fire control planning. Investigations are being made of forest fire behaviour, of the use of prescribed fire for hazard reduction and seedbed preparation, of better methods of reporting forest fires, and of fire damage appraisal and related factors in forest protection standards. Studies are being continued in the use of chemicals for fire suppression and pre-suppression, of fire fighting equipment and techniques, and of the use of aircraft in forest fire control. Another important field of endeavour is the study of fire hazard created by slash from various kinds of logging practices in different species.

**Forest Products Research.**—This work is directed toward obtaining background data on the properties of Canadian woods, developing new and better uses for wood

products, improving manufacturing processes, and effecting more complete utilization of wood substances. Activities cover all major aspects of forest products and include the determination of the physical, mechanical, chemical and anatomical properties of wood and their relation to adaptability in use; studies of factors affecting quality of wood and of manufactured wood products; determination of factors that cause wood waste in logging and manufacturing; investigation into fire retardant treatments, the preservative treatment and painting of wood and the use of wood for the manufacture of a variety of products by chemical or mechanical means; and studies to determine possible new economic and more valuable uses for woods and to determine methods for the economical utilization of all wood substances available from the annual timber harvest.

The program is conducted mainly at two laboratories—at Ottawa and Vancouver—with units consisting of timber engineering, containers, glues and gluing, veneer and plywood, timber physics, wood chemistry, pulping, wood preservation, paints and coatings, wood pathology, products entomology, wood anatomy, logging, lumber manufacture and lumber seasoning. Research results are made available to the thousands of plants comprising Canada's timber-manufacturing and wood-using industries. Liaison is maintained with these industries to ensure that the research being conducted is of optimum national benefit. There is also constant co-operation with various government units in the performance of many investigations concerned with the use of wood. Research into the use of wood in housing construction and as an engineered material continues in co-operation with the National Research Council and the Central Mortgage and Housing Corporation.

At regional establishments, products research is planned on utilization problems of regional interest, and products liaison officers visit sawmills and other wood-working plants to keep industry aware of research developments and technical advances and, on the other hand, to keep the department informed of field problems on which research would be of value.

Departmental personnel serve on many national and international technical committees concerned with forestry problems and continuous collaboration is maintained with forest products laboratories in other countries for the dual purpose of exchanging information and avoiding duplication of research.

**Forest Insects and Diseases.**—Research on forest insects and diseases is conducted at regional laboratories and field stations in all principal forest regions of Canada. A Canada-wide survey is undertaken in co-operation with the provincial forest services and forest industries to maintain an annual census of forest insect and disease conditions and to detect and predict the occurrence of outbreaks. Survey results are made available to owners and operators of forest lands for use in planning salvage programs and directing control measures to reduce damage.

Laboratory research programs are designed to lead to comprehensive understanding of the biology and ecology of the more destructive forest insects and fungi, and the causes of fluctuations in abundance or severity of damage in time and place. Problems under intensive study include insect defoliators, leaf diseases, sucking insects, dwarf mistletoes, stem cankers, bark- and wood-boring beetles, trunk and root decays, tip- and root-boring insects and diseases of tree seedlings in forest nurseries. Research on development, physiology, nutrition and taxonomy complements the field ecological studies of insects and fungi. Problems of national importance in insect pathology, cytology and genetics, bioclimatology and chemical control are investigated.

Experiments are also carried out in insect and disease control, utilizing cultural techniques, chemicals and biological control agents including parasites, predators and insect pathogens. Technical advisory services are provided in evaluating quarantine programs, possibilities of eradication or control, or other applications of research results. Examples include recommendations for reduction of seedling losses in forest tree nurseries through cultural techniques and chemical applications; the co-operative organization of cull surveys to improve forest inventories; consultation and advisory services for local

authorities on the Dutch elm disease problem; and technical co-operation with provincial governments and industrial agencies in the organization of spraying operations against the spruce budworm in New Brunswick, the jack pine sawfly in Quebec, and the hemlock needle miner and ambrosia beetle in British Columbia.

**Federal-Provincial Forestry Agreements.**—The passing of the Canada Forestry Act in 1949 was an event of great significance to federal-provincial relations in the field of forestry, as authority was given to the then Minister of Mines and Resources to "enter into agreements with any province for the protection, development or utilization of forest resources". Subsequently, this Act was replaced by the Department of Forestry Act, 1960 (re-named the Department of Forestry and Rural Development Act in 1966). Since the beginning, agreements have been entered into with most provinces; these now provide for federal financial support for programs of forest inventories and reforestation, for the purchase of capital assets to be used in forest fire protection and for forest access and stand improvement projects.

Under the Act, a composite forestry agreement was entered into with the provinces for a term of two years ending Mar. 31, 1967. This agreement includes in "a single package" the federal aid available for the above-mentioned purposes and also gives the provinces considerably greater freedom to allocate funds among the specified fields of work. A total of \$7,910,000 of federal funds is available annually, the allocation to the provinces being in proportion to their productive forest areas.

Federal assistance is based on payment of 50 p.c. of provincial costs but reforestation is the one exception; the Federal Government pays \$15 per thousand trees planted, \$4 per acre seeded with ground preparation, \$2 per acre seeded without ground preparation, and \$2 per acre for seedbed preparation to promote natural regeneration and, in addition, contributes 25 p.c. of the cost of establishing or expanding forest nurseries. Costs of management-type surveys are included in the agreement as sharable, and the reforestation of occupied or unoccupied Crown land qualifies for assistance provided it is carried out by the province.

Since 1951, more than \$56,000,000 in federal funds has been contributed to the provinces under the main forestry agreements, plus \$6,253,000 for aerial spraying in New Brunswick against budworm infestations and, on a smaller scale, in British Columbia and Quebec against the budworm and jack pine sawfly, respectively, and \$663,000 under a special forest improvement agreement with Nova Scotia, designed to provide woods experience for coal miners laid off in the Cape Breton area.

Work accomplished with federal assistance has included the completion of forest inventories by seven provinces. Most of the provinces have instituted programs concerned with management-type inventories and at the same time are maintaining their initial inventories in a reliable state. As a result of these inventories, new woods operations have sprung up, particularly in the British Columbia interior, and new pulp and paper mills have been built or are planned in other areas of Canada. The Federal Government has contributed under the agreements to the establishment of 16 new forest nurseries and five seed extraction plants and to the planting of 307,215,000 trees. Federal contributions of \$16,166,000 have been used for the purchase of fire towers, radios, motor vehicles, bulldozers, muskeg tractors, power pumps, hand pumps, hose, aircraft, and the construction of buildings required for the prevention, detection and suppression of forest fires and for the charter of aircraft for patrol, transportation and water-dropping purposes. Several hundred access projects designed to improve protection and permit the management of undeveloped forest areas have been undertaken, resulting in the construction of nearly 4,000 miles of road and 38 airstrips, with the Federal Government contributing more than \$21,301,000.



### Subsection 2.—Provincial Forestry Programs

All forest land in provincial territory, with the exception of the minor portions in National Parks, federal forest experiment stations, military areas and Indian reserves, is administered by the respective provincial governments. The forestry program of each province is outlined below.

**Newfoundland.**—Geographically, the Province of Newfoundland has two separate regions—the Island and Labrador on the mainland. The productive forest land of the Island is estimated at 12,984 sq. miles and of Labrador at 20,878 sq. miles, a total of 33,862 sq. miles. Most of Labrador's forests are leased but are as yet virtually untouched. Only 578 sq. miles are classified as farm woodlots.

A large part of the forest land in the interior of the Island is leased, licensed or owned by paper companies, but a three-mile-wide belt along most of the coastline is retained as unoccupied Crown land for the purpose of providing firewood, construction material, fencing material, etc., for the local populations. Within this coastal forest belt, every household has legal right to cut 2,000 cu. ft. of wood a year for domestic use. This form of cutting is generally without intense control or restriction but a policy is being introduced whereby cutting in certain 'management areas' is controlled by forest officers. Approximately one half of the Crown forests are at present under management. Commercial timber-cutting on unoccupied Crown lands has been by permit since 1952; permits for amounts up to 120 cords per person are issued by the field staff but permits for larger quantities must be approved by the government. This type of permit is generally preceded by advertising of standing timber for sale by tender, the timber involved usually being over-mature or damaged by fire, insects or storms.

The Island is divided into three forest regions, each of which is subdivided into five districts. Each region is under the control of a regional forester and each district is headed by a district ranger with a staff of rangers and assistant rangers. Twenty-eight well-equipped forest fire depots and 21 lookout towers, connected by radio-telephone, are operated by the Newfoundland Forest Service; others are operated by the Newfoundland Forest Protection Association, the two paper companies and the Canadian National Railways. The Forest Service operates eight aircraft for fire detection and water bombing, and two helicopters for transporting men and equipment.

Forestry operations in Labrador are under the supervision of a regional ranger located at Happy Valley (Goose Airport). The permanent staff of about 90 persons is augmented by a like number of seasonal employees during the fire season. Forest fire protection bases are located near Goose Airport and at the Carol Lake mining development area. The two paper companies maintain their own fire protection organizations.

**Prince Edward Island.**—Almost all of Prince Edward Island's woodland is privately owned, so that the Forestry Division of the Department of Agriculture is concerned mainly with planting, woodlot management and fire protection. A small nursery, established jointly with the Federal Government, deals with the Island's needs by providing planting stock for the reforestation of waste lands, the cost of which is shared by the Federal Government, and fulfilling the requirements of private individuals at a reasonable cost.

In proportion to its size, Prince Edward Island exports a great deal of pulpwood. This export, combined with the fuelwood and lumber cut each year, led to the inauguration of a program designed to educate the owner in the proper care and management of his woodlot.

Fire protection does not usually constitute too great a problem. Wooded areas are scattered in patches throughout the province and, since a network of roads makes all woodlots accessible, equipment can be brought to the scene of a fire quickly and easily. Research is limited mainly to reforestation and woodlot management problems.

**Nova Scotia.**—The land area of Nova Scotia is 20,402 sq. miles. Of this area, 16,274 sq. miles are classed as forested and 93 p.c. of the latter is regarded as productive. Although 91 p.c. of the forest land in Canada is held by the Crown in the right of the federal and provincial governments, only 22 p.c. is so held in Nova Scotia.

The provincial Crown lands are administered by the Department of Lands and Forests through a staff of foresters and rangers. Similarly, trained personnel are employed with some of the forest industries in the administration of privately owned forest lands. The Department administers the Lands and Forests Act as it pertains to all lands and is responsible for forest fire suppression. Forest fire detection is facilitated through 32 observation towers and an aerial patrol service, all integrated with land vehicles and headquarters by radio and telephone communication systems. Fire suppression crews and rangers with equipment are stationed throughout the province.

The forest industry is of prime importance to the economy of Nova Scotia. There are in operation about 500 sawmills of various types and sizes, one newsprint mill, two ground-wood pulp mills and a chemical pulp mill; construction of a second chemical pulp mill and a hardboard plant is under way. These mills, along with the export pulpwood trade and pitprop production, produced about 250,000 M ft. b.m. of sawn materials and about 650,000 cords of round products in 1965. Twenty-eight sawmills were equipped for the production of pulp chips from sawmill residue and the equivalent of about 85,000 cords of chips was produced from slabs and edgings.

The reforestation program, which has been active for many years, is being expanded with respect to non-forested land and experimental work on land preparation on fire barrens is being conducted. In 1965 approximately 1,000,000 trees were removed from the six forest nurseries for planting in the field, mostly on non-forested land.

Forest management programs include the construction of access roads into Crown land timber areas and stand improvement under federal-provincial agreements. Timber, pulpwood and Christmas trees are sold through public tender and cutting on Crown land is done under recommendation of district foresters of the Department of Lands and Forests. Management cruises, regeneration studies and experimental cuttings are conducted on Crown lands and an active program of operating these lands under sustained-yield management plans is well under way. Silvicultural techniques are being expanded to operational levels on Crown lands.

Forest research is carried on by Federal Government agencies and the Nova Scotia Research Foundation. Investigations involve stand improvement, cutting methods, and insect and disease activities. Extension projects include fire prevention, a film program for schools, distribution of information on forest and wildlife conservation, promotion of the Christmas tree industry, woodlot improvement, preparation of material for the mass media, and technical assistance to sawmill operators.

**New Brunswick.**—Of the total land area of New Brunswick (27,835 sq. miles), approximately 86 p.c. is classed as productive forest, of which the Crown, in right of the province, owns about one half. About 2 p.c. is owned by the Federal Government and the remainder is privately owned. The report of a provincial forest inventory, part of the national forest inventory, was published in 1958. The total volume of wood in merchantable sizes is estimated at 16,900,000 M cu. ft.; coniferous species make up 71 p.c. and deciduous species the remainder.

Protection from forest fires, the first requirement for forest conservation, is mainly the responsibility of the Department of Lands and Mines which also carries out duties in connection with game management and protection, provincial parks, and the administration of provincial Crown lands. A large-scale aerial spraying program to protect balsam fir and spruce from the spruce budworm has been carried on since 1952 by a Crown company sponsored by the federal and provincial governments and by representatives of the forest products industries. Forest Management Licences issued by the province

authorize operators to cut and remove forest products in accordance with forest management plans and cutting permits. Royalty is paid to the province when products are cut by the licensees.

New Brunswick does not maintain a forest research organization but co-operates with the federal Department of Forestry and Rural Development in that field. The University of New Brunswick has also undertaken a small number of forest research projects in co-operation with the National Research Council, the provincial government and other interested organizations.

In the field of education, the University of New Brunswick offers undergraduate and graduate courses in forestry leading to B. Sc.F. and M. Sc.F. degrees. It is also responsible for the administration of the Maritime Forest Ranger School in conjunction with the Governments of New Brunswick and Nova Scotia and with private industry. The forest extension services of the University assist both government and private agencies in the direction and planning of various forestry extension programs. The provincial Department of Agriculture also provides an expanding extension service to the owners of farm woodlots.

**Quebec.**—The forest lands of the Province of Quebec cover an area of 270,418 sq. miles extending from its southern borders to latitude 52° N, between the frontier of Labrador in the east and the Eastmain River Basin in the west. Of this total, 85,451 sq. miles are classed as occupied productive forest land, where tree-felling is done under lease and permit. The area owned privately covers 25,114 sq. miles and federal Crown forests, 225 sq. miles. Approximately 117,481 sq. miles of the productive forest lands of Quebec are unoccupied. About one third of the annual cut comes from privately owned lands.

The Woods and Forests Division of the Department of Lands and Forests administers the public forests of Quebec, including management and inspection, protection against pests and fire, the latter service extending to certain private forests, the taking of inventories, the issuing of operations permits and mill permits, the measuring of all timber cut, the control of shipments of timber outside Quebec, the collecting of stumpage dues, etc., the reclaiming of territories suited to forestry operations, the operation of nurseries and of student forestry camps, the supplying of technical assistance and information to forest owners, and rural forestry management.

The forests reserved for industry are leased as 'forest concessions' and a cutting licence is renewed annually as long as the concessionnaire has complied with conditions imposed. The licence specifies the amount of timber of each variety to be cut, where it is to be cut, tree diameters, etc. The Division supervises all cutting and requires full reports concerning planned operations. All wood cut on Crown lands must be measured by licensed cullers and be in accordance with official regulations. The measuring, in addition to establishing the amount of wood cut, is used as a basis for the reckoning of wages of forestry workers under contract and for the calculation of stumpage dues, which are sent monthly to the recipient and payable one month after receipt. Unleased forest land may be worked directly by the Division, or worked under contract or special agreement with private companies.

Quebec's forest protective system comprises three organizations—the Protective Service of the Department, the protective associations and the non-affiliated lease holders or owners. The Protective Service, in addition to its direct protection functions, enforces the legislation and regulations governing forest fire protection over the whole province. The protective associations, of which there are six, are syndicates of lease holders and of owners who have formed an association to satisfy the law which compels them to protect their limits or private forests of 2,000 acres or over. Members assume half the costs of fire fighting incurred by the associations. The third group is composed of lease holders or owners who prefer to discharge their obligations personally as far as forest protection is concerned. They are subject to the same obligations and privileges as the associations. Certain rural municipalities also take some responsibility for forest protection in their areas in co-operation with the Protective Service.



In its efforts to perpetuate the forest resources of the province on a sustained-yield basis, and to rehabilitate the areas that cannot reconstitute themselves, the Division has established 24 nurseries, the first of them at Berthierville in 1908. Some of them are large permanent establishments covering all phases of production and others are secondary or movable nurseries working with partly grown seedlings. The present stock of all nurseries is in the neighbourhood of 70,000,000 plants. Plants for the re-stocking of private properties are supplied free on request.

**Ontario.**—The boundaries of Ontario enclose an area of 412,582 sq. miles—83 p.c. land and 17 p.c. water. Forest lands comprise 75 p.c. of total land, of which 105,262,000 acres are classified as productive. The Crown owns 90 p.c. of the productive forest land.

Although 84 tree species (exclusive of the hawthorns) occur within Ontario, four species (black spruce 29 p.c., poplar 19 p.c., jack pine 13 p.c. and white birch 11 p.c.) account for almost three quarters of the total volume of standing trees. The total gross volume has been estimated at 151,000,000 M cu. ft.—61 p.c. softwoods and 39 p.c. hardwoods.

Crown forests are administered and managed through the Department of Lands and Forests, which has 10 branches at Head Office and 22 forest districts (grouped within seven regions). The Branches may be classified as service (Accounts, Law, Operations, Personnel, and Research) and operating (Fish and Wildlife, Forest Protection, Lands and Surveys, Parks, and Timber). The list of operating Branches indicates that a multi-use concept of forests is practised but only the programs that foster the growth and use of timber as a crop are discussed here.

**Management.**—The original function of the Timber Branch was to arrange for the orderly sale of timber and this important function is still carried out along traditional lines—operators are granted a licence to cut specified timber for which they pay stumpage at contractual rates on the measurement (scale) of products removed. However, the details and techniques of utilization are undergoing constant improvement. Although Ontario's forest-based industries have long been a Canadian leader in terms of diversity of products and value of shipments, there is still a surplus of allowable timber cutting over actual cutting in the province. To ensure the continuing supply of timber of the type required by industry, an effective management policy has been conceived. Continuing forest inventories, using aerial photographic methods in which the province pioneered, provide an up-to-date record of the forest wealth, showing the species and other characteristics of stands and their geographical distribution. Inventory data are then applied to management planning; the province has been divided into 216 management units, each homogeneous with respect to forest and use patterns. Long-term plans set out regulations on the volume and location of cuttings and include programs for regeneration and tending that will sustain yields. As of 1965, 162 plans (77 Crown, 66 company, and 19 agreement forest) were completed for approximately 170,000 sq. miles.

The Timber Branch is also responsible for the maintenance and improvement of forest production on Crown lands. It operates 10 forest tree nurseries (with their supporting tree seed collection, treatment, and storage plant), currently geared for an annual output of 60,000,000 units. In addition to plantings by Departmental staff, regeneration agreements have been signed with all major licensees under the terms of which they assume responsibility for the conduct of projects, receiving payment at an agreed rate for work completed. Other annual silvicultural measures include the direct seeding of over 5,000 acres, the scarification of 23,000 additional acres for natural seeding, and stand improvement treatment (cleaning, thinning, pruning, etc.) on 43,000 acres.

Over the past few years, the Research Branch has been developing a "tubeling" approach to planting, as a conventional planting substitute possessing greater flexibility both in nursery production and in length of planting period per year, so that unforeseen conditions, such as large burns, can be stocked promptly. Briefly, the procedure is to place 200 open-end, split plastic tubes (about  $\frac{1}{2}$ "  $\times$  3") in a tray, add soil, seed and covering material, and germinate in portable plastic-covered greenhouses. The tubes and

seedlings can be inserted intact into the ground at a rate of about 250 per man-hour. Limited testing has proved that this method is practicable and, during the summer months of 1966, a large-scale project (27,000,000) was conducted across the province.

For half a century, Ontario has had enabling legislation that permits municipalities to place abandoned and submarginal agricultural lands, to which they have acquired title, under agreement with the Department of Lands and Forests, which undertakes to plan and manage the properties for a specified period of time—usually 50 years. Nearly 200,000 acres currently under such agreements have been managed intensively, the plantations receiving regular thinnings. The trees removed are in demand for pulpwood, posts, poles and sawlogs, making the undertakings financially attractive. In addition, the properties that are close to centres of population are acquiring tremendous value as recreational areas.

Owners of private land may purchase planting stock for forestry purposes from government nurseries at nominal prices and may also receive free professional advice on any forestry matter, including silviculture, harvesting and marketing. Under new legislation (the Woodlands Improvement Act, 1966) the service to owners is greatly expanded and it is now possible to have planting and improvement work carried out completely under government direction and mainly at its expense. In return, the owner is required to meet a few modest demands that ensure his good faith.

A new but small group developing within the Timber Branch—the Economics Unit—is undertaking, in co-operation with other specialists, feasibility studies to lead to the establishment of forest-based manufacturers in under-developed areas, to expand and improve the statistical information of the forestry sector, to provide market information, and to analyse the economic implications of Departmental practices and proposals as a means of strengthening the value of services provided.

Expansion currently under way or completed within 1965-66 by major firms dependent upon timber products, permits a prediction that wood utilization in Ontario will increase by at least 1,000,000 cords a year by 1968. This very favourable rate of capital formation, together with the present dynamic approach to forest management, is assurance that a viable, broadly based forest industry is developing on a sound business basis.

*Protection.*—The area under organized forest protection in Ontario totals 176,000 sq. miles and includes the main central band of accessible forests. This area is organized into 21 fire districts and further subdivided into 54 chief ranger divisions for the purpose of forest protection. South of this area, in the highly developed agricultural counties of southern Ontario, the municipalities are responsible for fire control; the vast inaccessible areas to the north of the fire districts, totalling some 190,000 sq. miles, do not support significant stands of merchantable timber and, except for communities or other special values, are not protected. Within the fire districts, agreements were in effect in 1965 with 214 municipalities and 225 timber licensees for the prevention and control of forest fires. An agreement was also in effect with the Federal Government for the protection by the Ontario Department of Lands and Forests of 873,000 acres of Indian lands in the province. The average annual number of fires for the 1950-64 period was 1,360 and the average annual burn was 152,623 acres.

Forest fire detection is accomplished through a 310-lookout-tower system and through aerial patrols as well as public reports. During the autumn of 1965, an infra-red aerial detection system was evaluated and will be further appraised in 1966 for the detection of lightning fires. Also in 1965, 300 northern Ontario Indians were recruited and trained to provide a readily available body of skilled forest fire fighters at various key centres. Prescribed burning for hazard reduction and site preparation purposes was carried out on 12 burns covering 1,560 acres, a program scheduled to be increased to 7,000 acres in 1966. A new water-bombing system utilizing the interior of aircraft floats to carry the water load was developed in 1965, a design that increases the water concentration in the drop pattern by several times over the existing external tank system on Beaver and Otter aircraft.

Water-bombing aircraft took action on 70 fires in Ontario in 1965. At the end of 1965, the fleet consisted of 41 aircraft—six turbo-Beavers, 24 standard Beavers, 10 Otters and one Super Widgeon. Five helicopters were leased during the fire season. The communication system included 174 ground stations, 308 lookout-tower radios, 15 patrol vessels, 538 mobile radio telephones, 1,046 portable fire-line radios and 41 aircraft radio telephones.

Forest pest control programs were carried out on about 10,000 acres of Crown owned or managed forest lands in 1965. The main effort was concentrated on the European pine sawfly, the white pine weevil and the white pine blister rust. Experimental work was carried out with the chemical Bidrin, a systematic pesticide, to test the effectiveness of protecting individual elm trees with it against the conventional spraying method for controlling Dutch elm disease.

**Manitoba.**—The central administration of Manitoba's forests is organized into two Branches—Forest Management and Forest Protection. Each is in charge of a director and is a Branch of the Department of Mines and Natural Resources. The Province is divided into eight regions, each under a regional supervisor who is responsible to the Branch directors.

The Management Branch co-ordinates control measures for the propagation, improvement and management of the forests, the harvest of forest products, and forest inventory surveys. Two nursery stations are maintained to supply stock for reforestation of denuded Crown land and some natural seed areas have been established for nursery stock. Seedlings are supplied to farmers for shelterbelts and woodlots and to commercial Christmas tree producers. The program of forest stand improvement comprises thinning, clearing and chemical spraying to remove undesirable species and encourage growth of preferred trees. Forest inventories cover 3,000 to 4,000 sq. miles annually and on the basis of these inventories working plans with annual allowable cuts on a sustained-yield basis have been brought into operation.

Timber-cutting rights are awarded by Forest Management Licences, Timber Sales and, in certain cases (particularly for salvage operations), by Timber Permits. Forest Management Licences may be granted for periods of up to 20 years and are renewable. Timber Sales may be for varying periods from one year upward and Timber Permits for periods of up to one year. At present, one long-term Pulpwood Berth with an area of 2,745 sq. miles and 10 long-term Timber Berths, all granted prior to 1930, are in force. A second Pulpwood Berth agreement was signed early in 1966, covering the construction of a pulp mill and sawmill at The Pas and debarking units placed near Arnot in northern Manitoba.

The area of the province under forest fire protection is 120,000 sq. miles with zones of priority established in the less accessible areas. Fires are detected through a comprehensive network of lookout towers and supporting air and ground patrols, all tied together by radio and Departmental or public telephones. Two Canso water-bombers and two helicopters are rented for the worst of the fire season to supplement the aircraft of the Manitoba Government Air Service.

The province has no forestry research organization but co-operates with several federal services which maintain two research areas in the province. The Department co-operates fully with federal authorities in investigating and controlling forest damage resulting from insects and diseases. Public education in the fields of fire prevention and forest conservation is carried out and use is made of all usual methods including radio, television, newspapers, signs, talks to school children and club members, film tours, etc.

**Saskatchewan.**—The forests of Saskatchewan are located mainly in the northern half of the province and cover 117,738 sq. miles, or 53 p.c. of the total land area. Provincial forests constitute approximately 92 p.c. of all forest land in the province and are managed and developed by the Forestry Branch of the Department of Natural Resources.



The Forestry Branch, consisting of six divisions—Administration, Fire Control, Forest Management, Forest Research, Inventory and Silviculture—is responsible for developing and evaluating forest policies and management programs based on the findings of inventory and research. The responsibility for carrying out such policies and programs is borne by the various regional administrative authorities. For purposes of resource administration, the province, with the exception of the most northern portion, is divided into three regions, each under the supervision of a regional superintendent. The regions are subdivided into conservation officer districts which vary in size according to resource base and population to be served. In the most northern part of the province, because of various special programs with northern residents, resource administration is the responsibility of the Northern Affairs Branch of the same Department. Close liaison is maintained between the Forestry Branch and the various regional authorities.

A major responsibility of the Forestry Branch is the development of techniques in the prevention, detection and suppression of forest fires. A network of 72 lookout towers equipped with two-way radios is maintained throughout the province and is supplemented by three aircraft on regular patrol duty during the high-hazard periods. A group of smoke-jumpers, trained to parachute on remote fires, is in constant readiness during the fire season and, if necessary, takes immediate suppression action which it maintains until relieved by overland crews. Northern Saskatchewan's communication system, with more than 990 two-way radio sets in operation in towers, vehicles, aircraft and forest camps, plays a vital role in the detection and suppression of forest fires. These activities are assisted by the use of helicopters and aircraft equipped for water-dropping.

**Alberta.**—The 157,595 sq. miles of provincial forest in Alberta are administered by the Alberta Forest Service of the Department of Lands and Forests at Edmonton. The Service, headed by the Director of Forestry, is composed of five Branches—Administration, Forest Protection, Forest Management, Forest Surveys and Planning, and Forestry Training.

For ease of administration the forest area has been divided into 11 Forests, each responsible for the forest within its boundaries. These Forests are composed of Ranger Districts in which all activities are supervised by the district forest officer responsible to his superintendent. Each Forest staff includes: forest superintendent, fire control officer and assistant, forester, mechanical foreman, carpenter foreman, equipment operators, scalers, land-use officers, radio operators, clerks, stenographers, and seasonal help such as standby fire crews, lookout men, general labourers and construction crews. Some Forests have minimum security crews that are employed in forest management, protection and construction projects.

The Administration Branch supervises all branches, maintains general control over revenue and expenditure, maintains the equipment inventory and deals with personnel.

The Forest Protection Branch has charge of all phases of protection including prevention, detection, suppression and use of forest and prairie fires. The Branch also plans, supervises and executes the construction and maintenance of the road and building programs and supervises the radio communication facilities.

The functions of the Forest Management Branch include the acceptance and approval of management and annual operating plans prepared for leased and licensed Crown lands, implementation of management plans prepared by the Department, supervision of proper land-use practices and the disposal of Crown timber. This extends to all phases including processing of timber applications, selection of timber to be sold, cruising of merchantable timber, inspection of cutting areas to ensure proper logging and utilization practices, scaling of forest products, collection of dues and fees and reforestation programs for areas denuded by cutting and fire. It is also responsible for the implementation and supervision of the new timber quota system.

The Forest Surveys and Planning Branch maintains the provincial forest inventory and prepares and maintains detailed inventories by management units; prepares long- and short-term management plans; provides timber application forest-type maps; conducts other work pertaining to photogrammetry and forest-cover maps; develops and supervises recreational area plans; provides regulation of geophysical activities in the forest area; and provides technical drafting and mapping services to the Forest Service and the general public.

The Forestry Training Branch prepares training material and conducts training programs for Departmental personnel and other persons concerned with activities of fire control, forest management, forest protection and conservation. It also provides the facilities and instruction for the second year of a two-year forest technology course provided by the Northern Alberta Institute of Technology. The Branch organizes and supervises the activities of the Junior Forest Warden Clubs.

One Forest and part of two others are included in the Rocky Mountains Forest Reserve. This area is administered by the Alberta Forest Service but decisions of the Director of Forestry are based on policies of wise watershed regulation formed by the Eastern Rockies Forest Conservation Board. The Board comprises one federal and two provincial members. This reserve includes part of the headwaters of the main Prairie Provinces river system. Research in general is carried out by the federal Department of Forestry and Rural Development, which maintains the Kananaskis Experiment Station.

**British Columbia.**—The productive forest land of British Columbia is inventoried (1958) at 208,411 sq. miles with an additional 59,227 sq. miles of forest land classed as non-productive. Of the productive area, immature timber occurs on 95,739 sq. miles; 84,275 sq. miles carry mature timber estimated at 251,000,000 M cu. ft.; and 28,397 sq. miles are unclassified, including areas of burn, cut-over or windfall not yet restocked.

Canada's annual production of lumber, which reached a record 100,000 M ft. b. m. in 1955, British Columbia contributes about 68 p.c. of the total and 72 p.c. of the softwood. Although the Canadian economy depends about 96 p.c. on its hardwood lumber, most two thirds of the softwood is exported, making this commodity one of the country's major export items.





For administrative purposes, the province is divided into five Forest Districts with regional headquarters at Vancouver, Prince Rupert, Prince George, Kamloops and Nelson. Further decentralization of authority is effected by subdivision into Ranger Districts, of which there are approximately 25 in each Forest District. Twelve directional, servicing or policy-forming Divisions constitute the head office of the Forest Service at Victoria.

Efforts continue to bring British Columbia's forest resources under sustained-yield management and the forest industries are making progress toward more complete utilization of their raw materials. The problem is urgent despite the fact that, with a present annual scale of approximately 1,533,000 M cu. ft., the total inventory would appear sufficient to support current needs in perpetuity. One of the more spectacular results of sustained-yield administration has been the swinging of a greater proportion of the annual forest harvest to the interior of the province. The over-cut coast (wet belt) forests now account for about 56 p.c. of the total forest cut each year and the interior for 44 p.c. For all practical purposes, the entire interior forest is publicly owned; the great majority of privately owned, leased or licensed forests are on the coast.

Several systems of timber disposal are in effect. The most publicized is the Tree Farm Licence, which constitutes a contract between the government and a company or individual whereby the latter agrees to manage, protect and harvest an area of forest land for the best possible return, in exchange for the right to the timber crop on the area. Tree Farm Licences are subject to re-examination for renewal every 21 years. Provincial Forests, Pulp Harvesting Forests and Public Sustained-Yield Units are the governmental equivalent of the Tree Farm Licence with the timber, when it is ready for cutting, being disposed of by public auction. Of major interest is the Pulpwood Harvesting Area plan, unique in North America, which calls for the integration of a 'sawlog' economy with a new pulp industry; five of these Areas have now been established—three in Prince George Forest District, one in Prince Rupert Forest District and one in Kamloops Forest District. Management, silviculture, roadbuilding and protection on such Areas are the responsibility of the Forest Service. Other tenures of lesser importance are Tree Farms, Farm Woodlot Licences, and those Timber Sales issued outside 'regulated' areas.

Forest fire prevention techniques and organization for effective forest fire suppression are vital aspects of planned sustained-yield management. A greatly expanded pulp industry, added to the long-established logging and sawmill industries, has increased the necessity for more adequate fire control. Extensive use is made of aircraft under various terms of contract. Air tankers and fire-spotter aircraft are employed during the fire season and helicopters and other aircraft are employed under contract for patrol duties and for the transport of fire suppression crews. The rugged topography and the many remote and sparsely populated areas of the province demand the availability of a variety of transportation methods to tie in with fast discovery and early attack on all forest fires.

Close liaison with the federal Department of Forestry and Rural Development, through facilities at Victoria and Vernon, provides detailed information on insect and fungal enemies of the forest and on fire research.

### **Subsection 3.—The Pulp and Paper Research Institute of Canada\***

The Pulp and Paper Research Institute of Canada is a centre of research and learning concerned with virtually every aspect of the production and use of pulp and paper products. It was established in 1913 as a branch of the Dominion Forest Products Laboratories and in 1927 was reorganized under the joint sponsorship of the Canadian Pulp and Paper Association, the Federal Government and McGill University. The Institute staff carries out fundamental research and some applied research in the fields of woodland operations and pulp and paper mill operations. In addition, in co-operation with McGill University,

\* Prepared by B. W. Burgess, Secretary, Pulp and Paper Research Institute of Canada, Montreal, Que.



it trains postgraduate students who are working toward master's and doctorate degrees in physical chemistry, wood chemistry, or chemical and mechanical engineering, and whose theses subjects lie in fields of interest to the pulp and paper industry.

The Institute occupies a building on McGill campus erected by the pulp and paper industry and a building at Pointe Claire on the western outskirts of Montreal constructed by the Government of Canada. The Institute's facilities include: organic and physical chemistry, physics and engineering laboratories; pilot plants for chemical pulping, pulp and chip refining and waste liquor pyrolysis; a greenhouse and other facilities for woodlands research; an extensive library; shops and special facilities for pulp and paper testing and for photographic and microscopic (both light and electron) studies of wood, pulp and paper. It has a staff of about 195.

The Institute's research activities comprise a basic program in pulp and paper research and in woodlands research, contract research, and technical services. The basic pulp and paper research program is supported by assessments from the Maintaining Membership (some 42 companies, representing more than 100 mills and about 95 p.c. of the total production of the Canadian industry) and by a grant from the Canadian Pulp and Paper Association. The woodlands research program is supported by assessments on all member companies of the Canadian Pulp and Paper Association east of the Rockies that use pulpwood and by a grant from the Association. Both programs comprise research of interest to the industry broadly, as distinct from that which is the concern of a single company only.

The projects in the basic programs range from studies of the growing seedling in the forest to the converted pulp and paper product, and fall into seven broad classifications: woodlands, mechanical pulping, chemical pulping, paper making, process control, product quality and waste utilization. The Institute is regarded as a centre for broad, long-range and uninterrupted studies of basic principles and for major engineering research and development projects which individual pulp and paper companies would find difficult to justify if the costs were not shared. Moreover, the Institute is a centre of highly specialized equipment and manpower which individual companies would not normally have.

In addition to its permanent staff, the Institute, in co-operation with McGill University, has some 40 graduate students working on fundamental projects in the background of pulp and paper technology, which also serve as their theses topics. The Head of the Institute's Wood Chemistry Division, who is also the E. B. Eddy Professor of Industrial and Cellulose Chemistry at McGill, directs graduate student work on such subjects as the behaviour of the materials of which wood is made—cellulose, lignin and hemicelluloses. The Head of the Institute's Physical Chemistry Division, also a Professor in the McGill Chemistry Department, supervises graduate student work in polymer, surface and colloid chemistry with particular reference to those aspects that pertain to the physics and chemistry of pulp and paper. An Associate Professor of Chemical Engineering at McGill, who is a consultant to the Institute, directs graduate students in a variety of chemical studies. In addition, the Head of the Institute's Wood and Fibre Physics Division, who holds a teaching appointment in McGill's Department of Mechanical Engineering, supervises graduate student investigations on such subjects as supercalendering of paper and frictional processes in polymeric systems. Other staff members who hold concurrent honorary positions at McGill as Research Associates assist in this student program.

The Institute also undertakes contract research projects on a cost-reimbursement basis for individual companies or groups of companies in the pulp and paper or allied fields. The larger of these co-operative contracts have been concerned with problems of particular segments of the Canadian pulp and paper industry, such as the investigation into the causes of corrosion in alkaline pulping equipment and the study of the rapid deterioration of paper machine wires.

A further function of the Institute is to provide a broad range of technical information services to the industry and, to some extent, to other industries and the public. It maintains a specialized library for this purpose which stocks bibliographies, abstracts, translations and critical reviews for the use of the scientific staff and the industry.

# CHAPTER XIII.—MINES AND MINERALS

## CONSPECTUS

	PAGE		PAGE
SECTION 1. CANADA'S MINERAL INDUSTRY, 1867-1967.....	536	Subsection 1. Federal Government Aid....	581
Subsection 1. Metals.....	554	Subsection 2. Provincial Government Aid.....	586
Subsection 2. Industrial Minerals.....	566	SECTION 3. MINING LEGISLATION.....	590
Subsection 3. Petroleum and Natural Gas.....	573	SECTION 4. INDUSTRIAL STATISTICS OF THE MINERAL INDUSTRY.....	592
Subsection 4. Coal.....	578	SECTION 5. WORLD PRODUCTION OF CERTAIN METALLIC MINERALS AND FUELS.....	594
SECTION 2. GOVERNMENT AID TO THE MINERAL INDUSTRY.....	581		

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

## Section 1.—Canada's Mineral Industry, 1867-1967\*

Canada's mineral industry takes pride in its record of growth and expansion over the past hundred years, although its history reaches back to the activities of the earliest explorers. Samuel de Champlain, early in the 17th century, discovered silver and copper in what is now Nova Scotia and, later in that century, in 1672, Nicholas Denys noted the existence of coal on Cape Breton Island. At about the same time, Sieur de la Portardière began the first examination of bog iron deposits in Canada in the St. Maurice Valley of Quebec. In the 18th century, exploration activity increased and a number of mining operations were undertaken—coal was produced in Cape Breton and iron ore for iron-smelting operations was produced in several communities of Quebec. However, it was not until the 19th century that development of Canada's mineral resources got under way on a significant scale and by the middle of the century there had been sufficient mineral activity to give promise of a major resource industry. With the founding of the Geological Survey of Canada in 1842 began the systematic examination of the country's mineral resources and since then the Survey's records and reports have served as important guides to prospectors and exploration companies in their search for new mineral deposits.

By the time of Confederation a number of discoveries had been made in Eastern Canada but the most spectacular was the discovery of gold in British Columbia in the 1850s. Although the gold rush on the Fraser and Thompson Rivers was relatively short-lived, thousands of people flocked into British Columbia in the 1850s and the 1860s as a direct result of gold-mining activity. Settlement, railway construction, agricultural expansion and growing industrialization have followed many other mineral discoveries. Reference to even one or two notable examples of mineral discoveries in each decade of the past century illustrates the importance of the mineral industry in the economic development of Canada. In the 1860s a thriving oil industry was established in southwestern Ontario, following an initial discovery near Petrolia in the late 1850s. Asbestos was

\* Prepared under the direction of Dr. C. M. Isbister, Deputy Minister of the Department of Energy, Mines and Resources, Ottawa, in the following Divisions: Introduction and Subsections 1 and 3 by the Mineral Resources Division; Subsection 2 by the Mineral Processing Division, Mines Branch; and Subsection 4 by the Fuels and Mining Practice Division, Mines Branch. The statistical tables included throughout the Chapter were prepared in the Industry Division of the Dominion Bureau of Statistics. Figures for 1965 (except those for coal) are preliminary.

discovered in the Eastern Townships of Quebec in 1877 and Canada has since been one of the world's leading asbestos producers. In 1883, nickel-copper ores were found at Sudbury in Ontario and Canada has since been the world's leading nickel producer and one of the major copper producers. A number of gold, silver and base metal discoveries were made in southern British Columbia in the 1890s, including the great Sullivan mine, following an initial copper-gold discovery at Rossland in 1889. In 1896, the famous Klondike discovery in the Yukon precipitated the world's most spectacular gold rush. At the turn of the century, northern Ontario was the focus of attention when silver ore was discovered at Cobalt. This was followed by the discovery of many other major mining areas including the Porcupine gold mining camp in 1909 and Kirkland Lake in 1911. While exploration was continuing in northern Ontario and Quebec, leading to the Noranda copper find in the Rouyn district in 1921, oil and gas exploration in Western Canada resulted in the discovery of the important Turner Valley field near Calgary in 1913. The introduction of aircraft in mineral exploration in Northern Canada in the 1920s was a key factor in the discovery of pitchblende, a source of radium and uranium, at Great Bear Lake in the Northwest Territories in 1930, and in the finding of a number of gold and base metal deposits in the northern areas of the provinces, the Northwest Territories and Yukon Territory in the 1930s. The Leduc oil discovery in Alberta in 1947 was the start of Canada's present-day oil industry, one of the most thriving sectors of the mineral economy. Since the immediate postwar period, mineral discoveries have been made in almost every region of Canada and the industry's rapid growth and increasing diversification have had a profound effect on the Canadian economy.

The dynamic role of the mineral industry is evident from the fact that in 1867 the value of mineral production was well under 1 p.c. of the gross national product whereas it now accounts for over 7 p.c. Since 1867, the value of mineral production on a per-capita basis has risen from an estimated \$1 to almost \$200; this increase resulted from a growth of mineral production value from about \$3,000,000 to nearly \$4,000,000,000, an increase that greatly outpaced the country's population growth and industrial production as a whole. Mineral exports have increased in proportion to production and now account for almost one third of all of Canada's merchandise exports. The mineral industry's record of the past hundred years is indeed one of greatly increasing importance and Canada now ranks as the world's third largest diversified mineral producer following the United States and the Soviet Union.

The historical trend of the value of mineral production is shown in Table 1. Statistics are available from 1886 and are given for five-year intervals from that date to 1950 and annually for subsequent years. These figures are not strictly comparable throughout the period because of minor changes in methods of computing metallic content of ores sold and valuations of products but serve as a measure of the tremendous growth of this major industry.

1.—Value of Mineral Production, 1886-1965

Year	Total Value	Value per Capita	Year	Total Value	Value per Capita	Year	Total Value	Value per Capita
	\$	\$		\$	\$		\$	\$
1886.....	10,221,255	2.23	1935.....	312,344,457	28.84	1957.....	2,190,322,392	131.87
1890.....	16,763,353	3.51	1940.....	529,825,035	46.55	1958.....	2,100,739,038	122.99
1895.....	20,505,917	4.08	1945.....	498,755,181	41.31	1959.....	2,409,020,511	137.79
1900.....	64,420,877	12.15	1950.....	1,045,450,073	76.24	1960.....	2,492,509,981	139.48
1905.....	69,078,999	11.51	1951.....	1,245,483,595	88.90	1961.....	2,582,300,387	141.59
1910.....	106,823,623	15.29	1952.....	1,285,342,353	88.90	1962.....	2,850,986,179	153.53
1915.....	137,109,171	17.18	1953.....	1,336,303,503	90.02	1963.....	3,050,428,547	161.43
1920.....	227,859,665	26.63	1954.....	1,488,382,091	97.36	1964.....	3,387,971,534	176.14
1925.....	226,583,333	24.38	1955.....	1,795,310,796	114.37	1965 <sup>a</sup> ....	3,743,981,248	191.30
1930.....	279,873,578	27.42	1956.....	2,084,905,554	129.65			

<sup>a</sup>Value of Newfoundland production included from 1949.



### The Mineral Industry in 1965

The Canadian mineral industry in 1965 continued the strong advances in each of its three sectors—metallic minerals, industrial minerals and mineral fuels—that have been experienced since the slight decline in 1958. It was a good year that was characterized by growth of output both regionally and by commodity. Preparation for production was under way at several large mineral projects, commercial production commenced at some large projects and others were expanded, and a continuing high rate of success in the discovery of mineral deposits of economic importance was maintained.

Canada's mineral production had a value of \$3,744,000,000 in 1965, almost double the 1956 value of \$2,085,000,000. The increase over 1964 of 10.5 p.c. was one of the largest percentage increases in recent years and the total value gain of \$356,000,000 was the third largest annual advance ever recorded. The metallics sector accounted for \$229,000,000 of this increase, the non-metallics, including structural materials, accounted for \$46,000,000 and the mineral fuels for \$81,000,000. The percentage contributions to total mineral output value of these three sectors were 51.5, 19.5 and 29.0, respectively.

### 2.—Value of Mineral Production, by Class, 1956-65

Year	Metallics	Non-metallics	Fuels	Structural Materials	Total
	\$	\$	\$	\$	\$
1956.....	1,146,349,595	160,341,599	518,761,191	259,453,169	2,084,905,554
1957.....	1,159,579,226	169,061,110	564,776,791	296,905,265	2,190,322,392
1958.....	1,130,160,395	150,354,802	510,768,681	309,455,160	2,100,739,038
1959.....	1,370,648,535	178,216,641	535,577,823	324,577,512	2,409,020,511
1960.....	1,406,558,061	197,505,783	565,851,829	322,594,308	2,492,509,981
1961.....	1,387,159,036	210,467,786	653,327,802	331,345,763	2,582,300,387
1962.....	1,496,433,950	217,453,009	780,932,387	356,166,833	2,850,986,179
1963.....	1,509,536,931	253,452,413	908,428,087	379,011,116	3,050,428,547
1964.....	1,701,648,538	284,497,000	998,767,672	403,058,324	3,387,971,534
1965 <sup>a</sup> .....	1,930,231,456	310,827,059	1,079,737,606	423,185,127	3,743,981,248

The index of the volume of mineral production provides a means of measuring the mining industry's absolute growth and its comparative growth in the economy;\* in 1965 it was 365.6 (1949=100) compared with 211.3 for industrial production of the economy as a whole. The extent of the industry's growth is also evident from per capita comparisons (see Table 1); the per capita value of mineral output in 1965 was \$191, which was 2.9 times greater than the 1949 per capita, whereas the increase in the per capita value of the gross national product was 2.1 times in the same period. Net value criteria, which measure value added in the production process, also point to the dynamic role of mining in the Canadian economy; mining net value increase has been about double that of the economy as a whole since 1949 and, as a percentage of total primary industry net value, mining has risen from 20 p.c. to over 30 p.c. since 1949 whereas agriculture has declined from 60 p.c. to a little more than 40 p.c.

\* For a description of this index, as well as one for manufacturing and electric power and gas utilities, see DBS Reference Paper *Revised Index of Industrial Production, 1935-1967 (1949=100)* (Catalogue No. 61-502). To update these series and others in the Index of Industrial Production, see DBS monthly report *Index of Industrial Production (1949=100)* (Catalogue No. 61-005).

## 3.—Quantity Indexes of Production of the Principal Mining Industries, 1956-65

(1949=100)

NOTE.—Revised since publication in the 1966 Year Book.

Mineral	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965 <sup>p</sup>
<b>Metallics</b> .....	<b>160.1</b>	<b>188.4</b>	<b>210.4</b>	<b>242.5</b>	<b>236.4</b>	<b>220.4</b>	<b>225.2</b>	<b>227.5</b>	<b>245.7</b>	<b>249.5</b>
Copper <sup>1</sup> .....	134.7	136.3	131.0	150.0	166.7	166.7	173.6	171.8	187.8	195.6
Gold <sup>2</sup> .....	103.2	104.9	109.2	107.2	109.5	104.9	96.8	92.0	85.9	80.6
Nickel <sup>1</sup> .....	138.7	146.1	108.4	145.0	166.7	181.0	180.5	168.6	181.0	209.9
Iron ore.....	519.6	544.1	395.0	587.7	578.8	558.7	781.0	916.8	1,185.3	1,236.8
<b>Non-metallics</b> .....	<b>190.3</b>	<b>182.0</b>	<b>172.4</b>	<b>197.6</b>	<b>196.5</b>	<b>214.7</b>	<b>233.6</b>	<b>273.0</b>	<b>312.8</b>	<b>377.2</b>
Asbestos.....	192.1	186.3	177.3	192.1	200.7	222.3	233.5	240.4	259.9	269.4
<b>Fuels</b> .....	<b>346.9</b>	<b>360.3</b>	<b>331.6</b>	<b>364.6</b>	<b>377.7</b>	<b>433.4</b>	<b>483.5</b>	<b>516.6</b>	<b>557.7</b>	<b>592.8</b>
Coal.....	74.6	65.4	56.8	51.8	53.4	49.9	48.8	51.9	55.1	56.3
Natural gas.....	232.8	290.2	402.9	488.3	591.7	709.7	1,000.6	1,179.8	1,382.3	1,476.4
Petroleum.....	819.5	866.5	788.6	880.4	903.1	1,052.3	1,163.2	1,231.6	1,319.2	1,405.5
<b>Total Mining</b> .....	<b>218.3</b>	<b>239.3</b>	<b>243.3</b>	<b>275.4</b>	<b>275.6</b>	<b>283.0</b>	<b>304.7</b>	<b>318.3</b>	<b>346.4</b>	<b>365.6</b>

<sup>1</sup> Based on commodity data.<sup>2</sup> Production of the gold mining industry only.

## 4.—Quantity and Value of Mineral Production, 1964 and 1965

Mineral	1964		1965 <sup>p</sup>	
	Quantity	Value	Quantity	Value
		\$		\$
<b>Metallics</b> .....		<b>1,701,648,538</b>		<b>1,930,231,456</b>
Antimony..... lb.	1,591,523	700,270	1,232,665	653,312
Bismuth..... "	399,958	816,628	513,213	1,551,616
Cadmium..... "	2,772,984	8,984,467	3,009,447	8,366,263
Calcium..... "	138,357	151,694	123,487	123,391
Cobalt..... "	3,184,983	5,990,973	3,798,740	8,205,278
Columbium (Cb <sub>2</sub> O <sub>5</sub> )..... "	2,163,359	2,282,522	2,300,000	2,350,000
Copper..... "	973,799,939	324,467,834	1,034,493,452	388,005,039
Gold..... oz.t.	3,835,454	144,788,388	3,608,348	136,142,969
Indium..... "	"	"	"	"
Iron ore..... ton	38,325,822	404,951,696	39,790,103	419,393,058
Iron, remelt..... "	429,383	18,700,185	368,000	16,596,380
Lead..... lb.	407,433,858	54,759,110	573,621,676	88,911,360
Magnesium..... "	18,706,020	5,587,909	22,265,647	6,697,506
Mercury..... "	5,548	22,848	1,520	13,249
Molybdenum..... "	1,224,712	2,057,383	9,691,220	16,759,950
Nickel..... "	456,992,512	379,320,510	522,310,371	435,332,054
Platinum group..... oz.t.	376,238	25,404,117	452,063	35,678,078
Selenium..... lb.	465,746	2,258,868	504,109	2,435,704
Silver..... oz.t.	29,902,611	41,863,655	32,964,299	46,117,054
Tellurium..... lb.	77,782	505,583	86,264	554,793
Thorium..... "	"	"	"	"
Tin..... "	352,350	533,572	409,106	810,030
Tungsten (WO <sub>3</sub> )..... "	"	"	"	"
Uranium (U <sub>3</sub> O <sub>8</sub> )..... "	14,570,307	83,509,429	8,615,000	64,300,000
Zinc..... "	1,369,025,387	193,990,897	1,663,803,788	251,234,372
<b>Non-metallics</b> .....		<b>284,497,000</b>		<b>310,827,059</b>
Arsenious oxide..... lb.	323,900	16,195	300,000	15,000
Asbestos..... ton	1,419,851	145,193,443	1,380,210	139,805,322
Barite..... "	169,149	1,574,398	201,357	2,014,859
Diatomite..... "	1,143	64,555	1,200	65,000
Feldspar..... ton	9,149	212,052	10,830	241,621
Fluorspar..... "	"	2,258,796	"	2,546,419
Gem stones..... lb.	11,537	13,804	11,000	14,000
Graphite..... ton	"	"	"	"
Grindstone..... "	"	"	9	1,800
Gypsum..... "	6,360,685	11,523,937	6,210,960	11,438,353
Helium..... Mcf.	"	79,250	"	22,325
Iron oxides..... ton	1,033	1,155,282	1,035,048	1,164,060
Lithia..... lb.	1,056,408	3,569,619	"	4,007,241
Magnesian dolomite and brucite..... ton	"	86,025	886,550	29,560
Mica..... lb.	1,198,162	"	"	"

## 4.—Quantity and Value of Mineral Production, 1964 and 1965—concluded

Mineral	1964		1965 <sup>p</sup>		
	Quantity	Value	Quantity	Value	
		\$		\$	
<b>Non-metallics—concluded</b>					
Nepheline syenite.....	ton	290,300	3,097,172	328,813	3,548,947
Nitrogen.....	Mcf.	..	..	..	..
Peat moss.....	ton	255,475	8,399,648	267,100	8,195,214
Potash (K <sub>2</sub> O).....	"	858,351	31,161,954	1,430,000	54,400,000
Pozzolan.....	"	..	35,200	..	35,000
Pyrite, pyrrhotite.....	"	351,850	1,126,167	352,808	1,889,226
Quartz.....	"	2,117,273	4,509,038	2,381,555	4,943,639
Salt.....	"	3,988,598	20,203,742	4,331,100	21,564,734
Soapstone and talc.....	"	58,132	827,757	55,034	802,010
Sodium sulphate.....	"	333,263	5,222,313	346,000	5,590,312
Sulphur, in smelter gas.....	"	443,448	4,261,912	513,122	5,055,120
Sulphur, elemental.....	"	1,788,165	18,637,597	1,907,723	23,481,947
Titanium dioxide, etc.....	"	..	21,270,144	..	19,955,350
			<b>998,767,672</b>	...	<b>1,079,737,606</b>
<b>Fuels</b> .....					
Coal.....	ton	11,319,323	72,735,085	11,425,000	71,645,000
Natural gas.....	Mcf.	1,407,097,508	172,966,859	1,470,083,455	197,296,911
Natural gas by-products.....	bbl.	..	78,689,000	..	92,547,454
Petroleum, crude.....	"	274,626,385	674,376,728	293,571,941	718,248,241
			<b>403,058,324</b>	...	<b>423,185,127</b>
<b>Structural Materials</b> .....					
Clay products (brick, tile, etc.).....	..	..	40,830,585	..	43,205,829
Cement.....	ton	7,847,384	130,704,220	8,426,971	144,582,127
Lime.....	"	1,540,727	19,408,704	1,516,983	17,730,045
Sand and gravel.....	"	193,791,358	125,232,132	192,857,375	129,329,647
Stone.....	"	69,794,358	86,882,683	69,156,175	88,337,479
			<b>3,387,971,534</b>	...	<b>3,743,981,248</b>
<b>Grand Totals</b> .....					

## 5.—Percentage of the Total Value Contributed by Principal Minerals, 1956-65

Mineral	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965 <sup>p</sup>
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
<b>Metallics<sup>1</sup>.....</b>										
Copper.....	55.0	52.9	53.8	56.9	56.5	53.7	52.5	49.5	50.2	51.6
Gold.....	14.1	9.4	8.3	9.7	10.6	9.9	9.9	9.3	9.6	10.4
Iron ore.....	7.2	6.8	7.4	6.2	6.3	6.1	5.5	5.0	4.3	3.6
Lead.....	7.7	7.6	6.0	8.0	7.0	7.3	9.2	10.3	11.9	11.2
Nickel.....	2.8	2.3	2.0	1.6	1.8	1.8	1.5	1.5	1.6	2.4
Platinum group.....	10.7	11.8	9.2	10.7	11.9	13.6	13.5	11.8	11.2	11.6
Silver.....	1.1	1.2	0.7	0.7	1.2	0.9	1.0	0.7	0.7	0.9
Uranium.....	1.2	1.1	1.3	1.2	1.2	1.1	1.2	1.4	1.2	1.2
Zinc.....	2.2	6.2	13.3	13.7	10.8	7.6	5.5	4.5	2.5	1.7
	6.0	4.6	4.4	4.0	4.4	4.1	3.9	4.0	5.7	6.7
<b>Non-metallics<sup>1</sup>.....</b>										
Asbestos.....	7.7	7.7	7.2	7.4	7.9	8.2	7.6	8.3	8.4	8.3
Gypsum.....	4.8	4.8	4.4	4.5	4.9	5.0	4.6	4.5	4.3	3.7
Potash.....	0.3	0.4	0.2	0.3	0.4	0.3	0.3	0.4	0.3	0.3
Quartz.....	—	—	—	0.1	—	—	0.1	0.7	0.9	1.4
Salt.....	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sodium sulphate.....	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.7	0.6	0.6
Sulphur in smelter gas.....	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1
Sulphur, elemental.....	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Titanium dioxide, etc.....	—	—	0.1	0.1	0.2	0.3	0.3	0.4	0.6	0.6
	0.4	0.4	0.3	0.4	0.5	0.6	0.4	0.5	0.6	0.5
<b>Fuels.....</b>										
Coal.....	24.9	25.8	24.3	22.2	22.7 <sup>1</sup>	25.3 <sup>1</sup>	27.4 <sup>1</sup>	29.8 <sup>1</sup>	29.5	28.8
Natural gas.....	4.6	4.1	3.8	3.1	3.0	2.7	2.4	2.4	2.1	1.9
Petroleum.....	0.8	1.0	1.5	1.6	2.1	2.6	3.8	4.9	5.1	5.3
	19.5	20.7	19.0	17.5	17.0	18.9	19.4	20.2	19.9	19.2
<b>Structural Materials.....</b>										
Clay products.....	12.4	13.6	14.7	13.5	12.9	12.8	12.5	12.4	11.9	11.3
Cement.....	1.8	1.6	2.0	1.8	1.5	1.4	1.3	1.3	1.2	1.2
Lime.....	3.6	4.3	4.6	4.0	3.7	4.0	4.0	3.9	3.9	3.9
Sand and gravel.....	0.8	0.8	0.9	0.9	0.8	0.7	0.6	0.6	0.6	0.5
Stone.....	3.9	4.2	4.6	4.3	4.5	4.1	4.2	4.0	3.7	3.4
	2.3	2.7	2.6	2.5	2.4	2.6	2.4	2.6	2.5	2.3
<b>Grand Totals.....</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

<sup>1</sup> Includes minor items not specified.



Mineral production was recorded for 63 mineral commodities in 1965, the leaders being crude oil, nickel, iron ore, copper, zinc, natural gas, cement, asbestos, gold and sand and gravel. These 10 commodities accounted for 79 p.c. of the industry's output. Notwithstanding this, there were important gains for several other minerals—notably natural gas by-products, molybdenum, potash and elemental sulphur—indicative of growing mineral diversification. There is also increasing regional diversification caused by greater mineral industry activity throughout the country, resulting in particularly marked gains in British Columbia, New Brunswick and Newfoundland, and in appreciable increases in all other provinces except Nova Scotia where the decline of the coal industry is having an adverse effect. Canada's land area of 3,600,000 sq. miles and extensive offshore areas provide great scope for continuing discovery and expansion. This trend to diversification is also evident from the output increases for most of the minerals produced and from the fact that Central Canada—Ontario and Quebec—now accounts for 45 p.c. of the country's output compared with close to 62 p.c. at the end of World War II.

The Canadian mineral industry is strongly export-oriented and, consequently, production increases are determined in considerable part by progress in export markets. The metallic mineral sector, in general, is an export industry, close to four fifths of its output being exported. Exports of all mineral materials in crude and fabricated forms in 1965 totalled \$2,782,000,000. The mineral industry is the country's leading export industry and for several years has been accounting for close to one third of the value of all merchandise exports. In 1965, the United States took 59 p.c. of Canada's mineral exports, Britain took 19 p.c., the European Common Market 8 p.c. and Japan 4 p.c.; the remaining 10 p.c. had a world-wide distribution.

Mineral industry growth is greatly dependent on continuing large-scale investment for resource development and plant expansion. Capital and repair expenditures in mining, quarrying and oil wells in 1965 amounted to \$881,000,000, 9 p.c. greater than in 1964. The forecast for 1966 is \$1,132,000,000, an increase of 28 p.c. over 1965 and a dramatic indication of the scale of expansion now under way in the industry.

Associated with mineral production growth and capital investment, there has been continuing progress in mining technology. Highly competitive world markets, rising labour and material costs, shortages of workers, and the opening up of more remote mineral properties have all contributed to the drive toward lower costs and greater efficiency in mining operations. In striving to be more competitive, the Canadian mineral industry has begun to increase its investment in research and to turn its attention to the problem of the shortage of engineers and scientists in the industry. As a result, research establishments are being enlarged and an active campaign is under way to encourage more young people to take university or technical school training in preparation for scientific, engineering and technical work in the Canadian mineral industry. Many companies have reported recent advances in mining procedures in Canadian mines that are resulting in greater efficiency.

The relatively high increase in value of metallics output in 1965 was the result of both price and quantity factors. Prices for the major base metals were firm and in some cases higher. Output of iron ore and base metals was high as new facilities commenced production and some existing facilities were expanded. Marked advances were made in lead with a gain in output value of about 62 p.c., in zinc of nearly 30 p.c., nickel 15 p.c. and copper of nearly 20 p.c. Nickel regained first place from iron ore as Canada's leading metallic mineral. Several copper, copper-zinc and copper-nickel mines commenced production in 1965 and others were being developed or planned for production in the next few years. The year heralded Canada's emergence as a major molybdenum-producing country, surpassed only by the United States and probably the Soviet Union. There was

higher output of a number of other metals that are recovered mainly as by-products of base metal operations. Output of gold and uranium declined from 1964, a trend that has been in evidence for several years.

The outstanding development in the industrial mineral sector of the industry again was related to production gains and announced mine development plans for potash production in Saskatchewan. Three companies contributed to 1965 output and development programs were under way that will add six new producers by 1968. It is widely acknowledged that potash reserves in Western Canada are the largest and of the highest grade in the world and by far the most economically attractive of any known deposits. Asbestos output, following five successive years of production records, declined slightly from 1964 but the value of shipments of elemental sulphur recovered from the processing of natural gas set a new record. The continuing high production of structural materials, which with non-metals comprise the industrial minerals sector, kept pace with the high rate of all types of construction. Production of mineral fuels, embracing crude petroleum, natural gas, natural gas liquids and coal, reached its highest point in 1965, all items except coal setting new records.

### Provincial and Territorial Mineral Production in 1965

Ontario is Canada's leading mineral-producing province, its 1965 output, valued at \$986,000,000, being 26.3 p.c. of the total for the country. Following in order were Alberta with 21.4 p.c., Quebec with 18.8 p.c., Saskatchewan with 8.7 p.c., British Columbia with 7.6 p.c., Newfoundland (incl. Labrador) with 5.9 p.c., and Manitoba with 4.9 p.c. It should be noted, however, that Ontario's percentage position of mineral output to total output continued to decline although it still maintained a substantial lead over that of Alberta, which in 1961 had displaced Quebec in second position. All provinces increased their mineral output value in 1965, Ontario, Alberta and Newfoundland showing the largest absolute gains.

### 6.—Value of Mineral Production, by Province, 1956-65

NOTE.—Figures from 1899 are given in the corresponding table of previous Year Books beginning with the 1933 edition.

Year	Newfound- land (incl. Labrador)	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
	\$	\$	\$	\$	\$	\$	\$
1956.....	84,349,006	—	66,092,274	18,258,302	422,464,410	650,823,362	67,909,407
1957.....	82,682,263	—	68,058,743	23,120,689	406,055,757	748,824,322	63,464,285
1958.....	64,994,754	—	62,706,891	16,275,971	365,706,489	789,601,868	57,217,569
1959.....	72,156,996	4,559,171	62,879,647	18,133,290	440,897,186	970,762,201	55,512,410
1960.....	86,637,123	1,172,587	65,453,531	17,072,739	446,202,726	983,104,412	58,702,697
1961.....	91,618,709	606,644	61,693,156	18,804,385	455,522,933	943,669,456	101,489,787
1962.....	101,858,960	677,906	61,651,093	21,811,575	519,453,166	913,342,174	158,932,169
1963.....	137,796,707	798,345	66,317,617	28,343,419	540,615,068	873,828,297	169,638,539
1964.....	182,152,656	831,283	66,073,596	48,676,712	684,583,430	901,582,694	173,872,576
1965 <sup>a</sup> .....	220,483,234	985,171	66,633,831	83,944,030	704,704,474	986,183,278	182,010,655

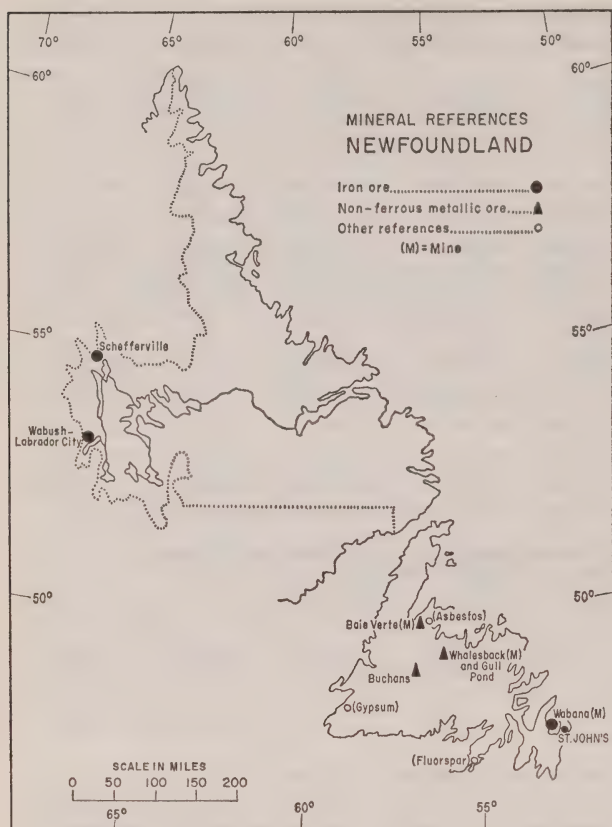
**6.—Value of Mineral Production, by Province, 1956-65—concluded**

Year	Saskatchewan	Alberta	British Columbia	Yukon Territory	Northwest Territories	Canada
	\$	\$	\$	\$	\$	\$
1956.....	122,744,698	411,171,898	203,277,828	15,656,434	22,157,935	2,084,905,554
1957.....	173,461,037	410,211,763	178,931,120	14,111,798	21,400,615	2,190,322,392
1958.....	209,940,966	345,939,248	151,149,136	12,310,756	24,895,390	2,100,739,038
1959.....	210,042,051	376,215,593	159,395,092	12,592,378	25,874,496	2,409,020,511
1960.....	212,093,225	395,344,010	186,261,646	13,330,198	27,135,087	2,492,509,981
1961.....	215,977,233	473,480,540	188,542,078	12,750,304	18,145,162	2,582,300,387
1962.....	240,653,502	566,502,703	235,428,135	13,137,730	17,537,066	2,850,986,179
1963.....	272,355,007	669,311,368	261,146,081	14,366,936	15,911,163	3,050,428,547
1964.....	292,373,974	735,896,463	268,659,305	15,204,103	18,064,742	3,387,971,534
1965 <sup>a</sup> .....	327,326,166	799,344,875	286,161,560	13,341,266	72,862,708	3,743,981,248

**7.—Value of Metallics, Non-metallics, Fuels and Structural Materials Produced, by Province, 1964 and 1965**

Year and Province or Territory	Metallics	Non-metallics	Fuels	Structural Materials	Totals
	\$	\$	\$	\$	\$
<b>1964</b>					
Newfoundland (incl. Labrador).....	166,169,266	9,995,362	—	5,988,028	182,152,656
Prince Edward Island.....	—	—	—	831,283	831,283
Nova Scotia.....	1,517,490	14,581,437	42,827,589	7,147,080	66,073,596
New Brunswick.....	29,648,079	1,099,685	8,573,688	9,355,260	48,676,712
Quebec.....	407,223,690	158,154,242	—	119,205,498	684,583,430
Ontario.....	701,272,213	21,472,923	9,774,192	169,063,366	901,582,694
Manitoba.....	143,166,538	2,967,919	10,296,549	17,441,570	173,872,576
Saskatchewan.....	44,827,103	38,201,998	196,510,552	12,834,321	292,373,974
Alberta.....	2,233	18,621,938	684,302,726	32,969,566	735,896,463
British Columbia.....	175,104,184	19,401,496	45,931,273	28,222,352	268,659,305
Yukon Territory.....	15,105,953	—	98,150	—	15,204,103
Northwest Territories.....	17,611,789	—	452,953	—	18,064,742
<b>Canada.....</b>	<b>1,701,648,538</b>	<b>284,497,000</b>	<b>998,767,672</b>	<b>403,058,324</b>	<b>3,387,971,534</b>
<b>1965<sup>a</sup></b>					
Newfoundland (incl. Labrador).....	203,144,608	11,120,550	—	6,218,076	220,483,234
Prince Edward Island.....	—	—	—	985,171	985,171
Nova Scotia.....	1,316,562	14,667,753	41,950,000	8,699,516	66,633,831
New Brunswick.....	64,974,028	1,551,001	8,410,570	9,008,431	83,944,030
Quebec.....	432,334,881	151,935,508	—	120,434,085	704,704,474
Ontario.....	780,680,289	20,810,763	9,749,340	174,942,886	986,183,278
Manitoba.....	149,233,043	2,790,304	11,661,993	18,325,315	182,010,655
Saskatchewan.....	41,584,473	62,446,111	210,711,962	12,583,620	327,326,166
Alberta.....	7,004	22,701,558	742,073,712	34,562,601	799,344,875
British Columbia.....	171,353,841	22,803,511	54,578,782	37,425,426	286,161,560
Yukon Territory.....	13,231,266	—	110,000	—	13,341,266
Northwest Territories.....	72,371,461	—	491,247	—	72,862,708
<b>Canada.....</b>	<b>1,930,231,456</b>	<b>310,827,059</b>	<b>1,079,737,606</b>	<b>423,185,127</b>	<b>3,743,981,248</b>





**Newfoundland (incl. Labrador).**—The mineral output of the Province of Newfoundland (incl. Labrador) has grown rapidly in the past few years, iron ore production from Labrador being by far the main contributor. All metallics produced in the province in 1965 had a value of \$203,100,000, of which iron ore production of 14,600,000 tons accounted for \$168,500,000. Outputs of copper, zinc and lead, mainly from the Buchans Mine near St. John's, were valued at \$13,000,000, \$11,200,000 and \$7,200,000, respectively. One new copper mine commenced production during the year and another was under development for production in 1966. Wabush Mines started shipments of concentrates from its 5,300,000-ton-a-year facility at Wabush in Labrador, of which 4,900,000 tons a year is pelletized at the plant of Arnaud Pellets, an associated company, at Pointe Noire, Que. Iron Ore Company of Canada, Limited, produces about 6,000,000 tons of concentrate a year at its Carol operations near

Labrador City and pelletizes about 5,000,000 tons a year at the nearby plant of Carol Pellet Company, an associated company; the remainder is shipped as concentrates. Capacity of the pellet plant will be increased to 10,000,000 tons a year in 1966. It seems almost certain that growth in the value of mineral output in the province will depend almost entirely on iron-ore-industry growth. However, the potential of the Island for discovery and development of base metal properties is high, even though present operators are mining long-known deposits.

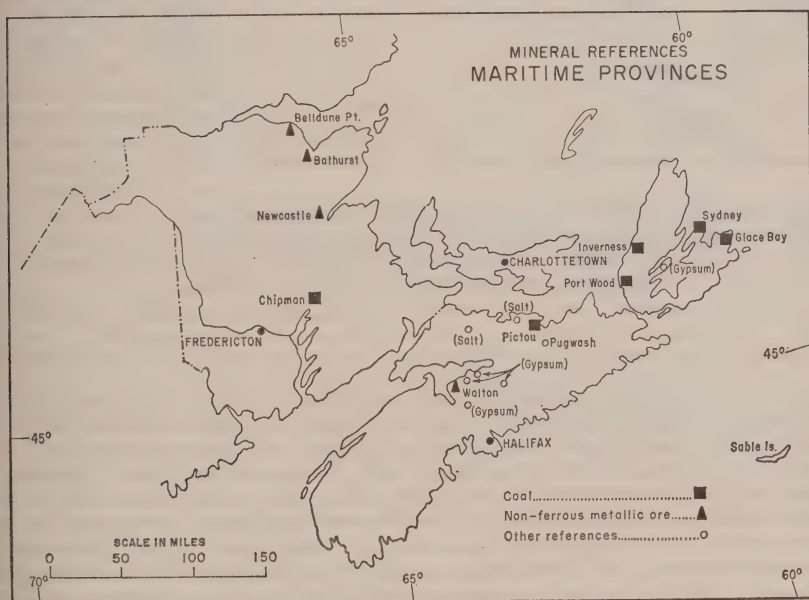
The value of industrial minerals produced in 1965 was \$17,300,000 compared with \$16,000,000 in 1964, asbestos contributing nearly \$7,000,000 and structural materials \$6,200,000.

**Prince Edward Island and Nova Scotia.**—Prince Edward Island's mineral industry is confined to the production of structural materials, which in 1965 were valued at nearly \$1,000,000.

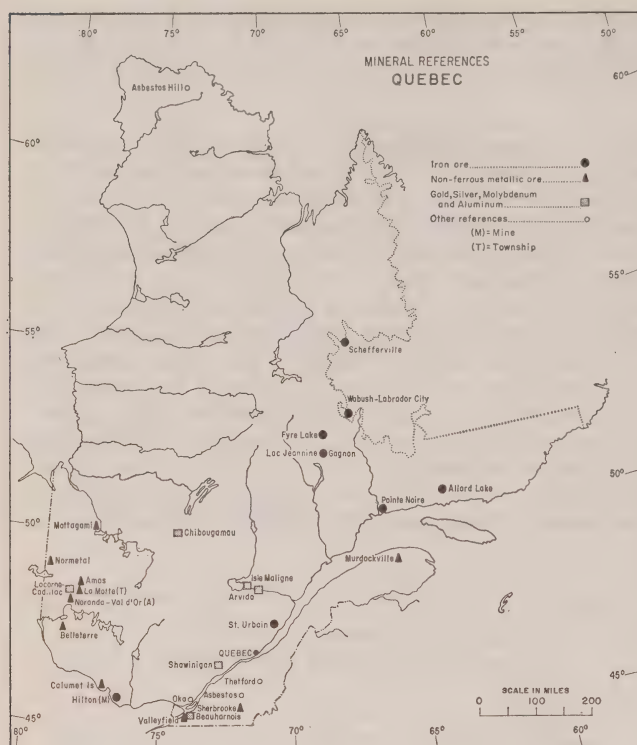
Nova Scotia has shown the least change in total value of mineral output of all provinces over the past 15 years. Its main contribution to the Canadian mineral industry is in the output of coal, which in 1965 amounted to 4,100,000 tons worth \$42,000,000, and in the output of non-metallics which were valued at \$14,700,000, with gypsum, salt and barite being the main contributors. The coal industry continues to operate only with difficulty,

despite the rising financial assistance under the long-standing federal coal subvention policy. Some encouragement has been recently obtained in the search for base metal deposits and a study has been undertaken to evaluate the possibility of finding potash in commercial quantities.

**New Brunswick.**—Only in recent years has mineral production in New Brunswick begun to grow and to become of significance in the province's economic picture. The discovery of large zinc-lead-copper-silver deposits near Bathurst and the beginning of production from them in 1963 has raised New Brunswick's base metal output to \$65,000,000 in 1965. Brunswick Mining and Smelting Company Limited is enlarging its base metal operations to the west of Bathurst, raising mill capacity to 6,000 tons a day from 4,500 tons a day, and is developing its No. 6 mine for production in 1966; an associated company is building a zinc-lead blast furnace at Belledune Point, about 25 miles north of Bathurst. Heath Steele Mines Limited and Cominco Limited produce base metal concentrates. Several companies are exploring and developing base metal properties and studying production plans. Zinc production was valued at \$39,000,000 in 1965 compared with \$15,400,000 the previous year and lead, copper and silver outputs were valued at \$14,400,000, \$7,300,000 and \$4,100,000, respectively. The \$125,000,000 base metal-chemical-steel-fertilizer facilities being developed by Brunswick Mining and Smelting will provide a strong base for further industrial development that will contribute greatly to the province's economic growth.



**Quebec.**—The Province of Quebec is second to Ontario in value of metallic output, which totalled \$432,300,000 in 1965 compared with \$407,200,000 in 1964. Quebec led all provinces in iron ore production at 14,800,000 tons but was second to Newfoundland in value of iron ore output at \$141,600,000. Copper production at 352,000,000 lb. worth \$132,000,000 was higher than in 1964 as was zinc output at 552,000,000 lb. valued at



\$83,300,000. There was considerable activity in base metal exploration and development in the province during 1965, particularly in the northwest and Gaspé areas. Mineral development and plant construction programs under way indicate that production of copper and zinc should increase appreciably in the next few years; one copper mine commenced production in 1965 in the Eastern Townships and a second, north of Amos, started production and mill tune-up late in the year. The Pyre Lake iron orebody, about 60 miles north of Lac Jeannine, will be developed to supplement production of the 9,000,000 tons of concentrate a year from the Lac Jeannine facility.

Quebec leads all provinces in the production of non-metallics, which in 1965 were valued at \$151,900,000, asbestos

contributing \$119,000,000 of the total. After five successive annual production records there was a decline in Quebec and Canadian asbestos production. Plans were announced in 1965 for the development of the Asbestos Hill deposit in far northern Ungava at an estimated cost of \$90,000,000, with production scheduled for 1968.

Output of titanium dioxide slag was valued at \$20,000,000 compared with \$21,300,000 in 1964. It, along with remelt iron, which was valued at \$16,600,000 in 1965, is produced by the electric smelting of ilmenite at Sorel, the largest facility of its kind in the world.

**Ontario.**—Ontario's mineral production in 1965 at \$986,200,000 led all provinces. Metallics, at \$780,700,000, accounted for 79 p.c. of the total and nickel's contribution of \$319,800,000 accounted for 41 p.c. of the metallics' value. In an account of progress of the mineral industry, particularly for Ontario, that of nickel is outstanding. International Nickel and Falconbridge Nickel Mines Limited, first and second among world producers have expansion programs under way that will maintain and probably improve their positions as world leaders. World nickel consumption in 1965 was higher than the 640,000,000 lb. consumed in 1964; the United States, consumer of about one half of the nickel used in the western world, reported that consumption in the first half of the year was 27 p.c. higher than in the same period of 1964. The increase in nickel production in the Sudbury area was accompanied by an increase in copper production, which for the province totalled 438,000,000 lb. compared with 396,000,000 lb. in 1964. Probably the major development in the province outside the Sudbury area was the preparation for production in late 1966 of the copper-zinc-silver orebody, near Timmins, of the Texas Gulf Sulphur Company, at an initial daily rate of 6,000 tons of ore.



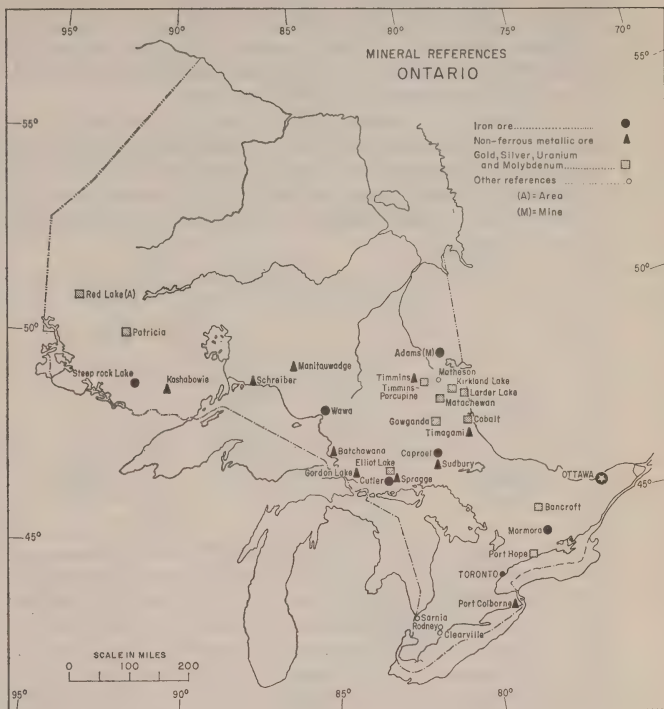
Production of iron ore at 8,300,000 tons valued at \$90,600,000 was slightly higher in quantity and value than in 1964. A new iron ore pellet plant near Kirkland Lake started regular shipments early in the year from its 1,250,000-ton-a-year facility and a new pellet plant in the Atikokan area started shipments about mid-year. Another company was constructing facilities in the Timagami area that will have a pellet capacity of 1,500,000 tons a year and two other companies were considering production of pellets from properties in north-western Ontario.

Structural materials output in 1965 valued at \$175,000,000 compared favourably with \$169,000,000 in 1964 and gives every indication of a continuing high rate to meet requirements of all types of construction.

Notwithstanding reduced output of uranium and gold, Ontario's mineral production is expected to grow at an accelerated rate in the years ahead, with considerably higher output of nickel, copper and iron ore. Many by-product metals are recovered from the processing of nickel-copper and copper-zinc production, the most common being platinum-group metals, gold, silver and cobalt.

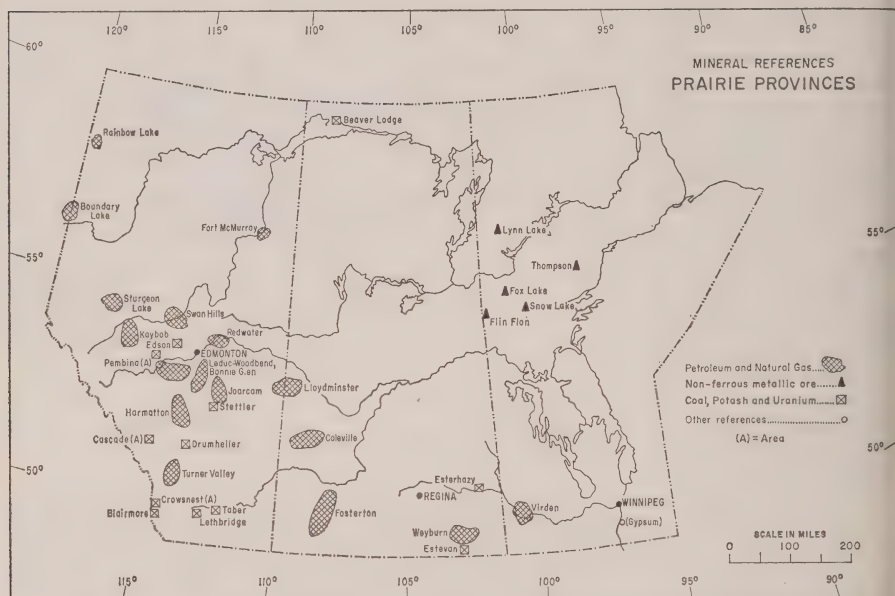
**Manitoba.**—Nickel, copper and zinc accounted for about 78 p.c. of Manitoba's value of mineral output in 1965, nickel accounting for \$106,800,000 of the \$182,000,000 total. International Nickel operates the world's only integrated nickel-production facility at Thompson—mine, concentrator, smelter and refinery—and is developing the Birchtree and Soab mines for production in 1968. Sherritt Gordon operates a nickel-copper mine at Lynn Lake and ships concentrates to its chemical refinery at Fort Saskatchewan in Alberta for recovery of nickel, copper and cobalt. The company started sinking a five-compartment shaft at a copper-zinc deposit south of Lynn Lake for an underground exploration and development program. Hudson Bay Mining and Smelting continued development of its Osborne and Anderson Lake copper-zinc mines near Snow Lake; it operates four mines in Manitoba and the Flin Flon mine that straddles the Saskatchewan border, all concentrates from which are smelted at Flin Flon. Production of structural materials at \$18,300,000, mineral fuels at \$11,700,000 and non-metallics at \$2,800,000 together constituted 18 p.c. of the province's mineral output in 1965.

**Saskatchewan.**—Attention in Saskatchewan in 1965 was again focused on the increased production of the potash development programs. Three companies produced 1,430,000 tons of potash worth \$54,400,000 compared with 858,351 tons worth \$31,200,000



in 1964. Mine development programs under way or announced will add six new producers by 1968 and will place Canada in first position among world producers of this necessary fertilizer ingredient. World potash production capacity in 1965 was an estimated 12,400,000 tons of  $K_2O$ ; it is expected that Canadian productive capacity in 1968 will be between 6,000,000 and 7,000,000 tons a year.

Total value of mineral output was \$327,300,000 to which mineral fuels contributed \$210,700,000, non-metallics \$62,400,000 and metallics \$41,600,000. Uranium ( $U_3O_8$ ), copper and zinc were the leading metallic minerals. Crude petroleum production at 87,600,000 bbl. was valued at \$200,400,000, a new record. There is every indication that crude oil and potash together will produce an increasing percentage of the province's mineral output.



**Alberta.**—Crude oil, natural gas and natural gas by-products are by far the major components of Alberta's mineral industry, which recorded a total output value of \$799,300,000 in 1965 compared with \$735,900,000 in the previous year. The three commodities contributed 91 p.c. of the total, crude oil accounting for \$474,000,000, natural gas for \$169,400,000 and natural gas by-products for \$86,900,000. The development of Alberta's oil and gas resources and markets continued to meet with success. A major oil resource was being opened up in the Rainbow Lake area in the northwestern part of the province. Exploration and development drilling reached an all-time high of 10,200,000 feet compared with the record of 10,334,000 feet set in 1964. Recovery of elemental sulphur from the processing of natural gas was worth \$20,700,000 compared with \$16,800,000 the previous year and production accounted for an estimated 1,650,000 tons of Canada's 1,908,000 tons. Canada is second only to the United States as a world producer of elemental sulphur as a result of the large-scale development of natural gas resources.

**British Columbia.**—Mineral production in British Columbia reached \$286,200,000 in 1965, 6.5 p.c. above the previous year's total. Metallics output was valued at \$171,400,000, mineral fuels at \$54,600,000 and structural materials at \$37,400,000. The year was highlighted by developments in the non-ferrous sector. Plans for development

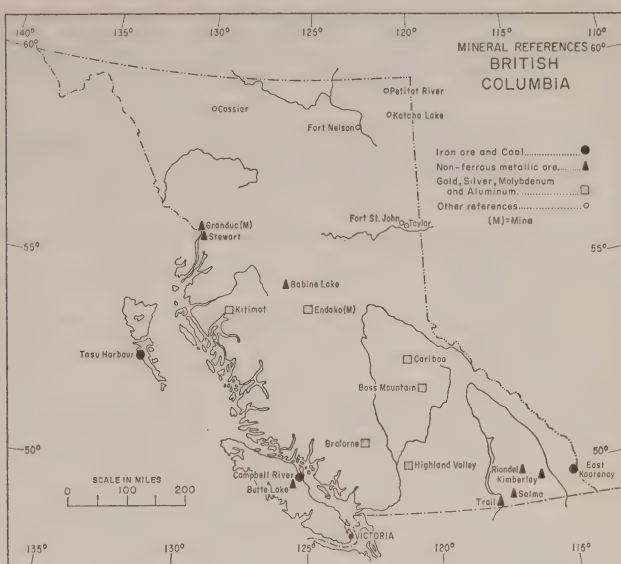
of large-tonnage copper operations were announced and the molybdenum industry showed strong advances. Copper production was down to 88,000,000 lb. from 115,000,000 lb. in 1964 but this situation will reverse itself when new mines reach production. The province was heralded as a major molybdenum producer with three mines in operation and another being developed for production in 1966. With an output of 321,000,000 lb. of zinc and 242,000,000 lb. of lead, the province remains far in front of all the provinces in these important export commodities. Five iron ore producers shipped a record 2,100,000 tons of iron ore valued at \$18,800,000, nearly all of which

was exported to Japan; another producer starting operations in 1966 will have an annual iron ore production capacity of over 900,000 tons and will recover copper as a by-product. Exploration for base metal properties was widespread throughout the province and encouraging results were obtained by diamond drill exploration of large-tonnage, low-grade copper deposits east of the Alaskan Panhandle and north of Stewart, in north-central British Columbia and in the Highland Valley area.

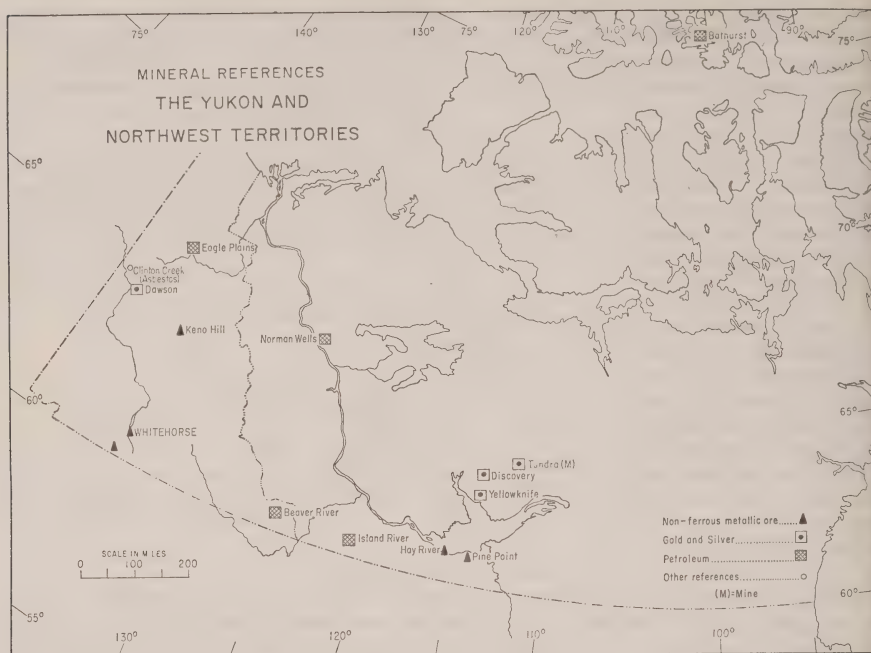
Asbestos production valued at \$13,700,000 accounted for about 10 p.c. of Canada's total and for about 60 p.c. of the province's output of non-metallies. Outputs of crude petroleum, natural gas and natural gas by-products were at all-time highs with values of \$27,200,000, \$17,900,000 and \$3,400,000, respectively.

**Yukon Territory and Northwest Territories.**—In the Yukon Territory, mineral output was valued at \$13,300,000, of which \$13,200,000 was metallic production; silver, lead, zinc and gold, in that order, accounted for nearly all of it. Of significance to future mineral output in the Yukon were the announcements that the Clinton Creek asbestos deposit, about 40 miles north and west of Dawson, would be developed for production; that New Imperial Mines Limited may begin production of copper from its property southwest of Whitehorse; and that substantial lead-zinc resources had been encountered in exploration of the Vangorda area near the British Columbia border.

Metallic mineral output of the Northwest Territories was valued at \$72,400,000 with zinc, lead and gold contributing \$28,300,000, \$24,300,000 and \$17,000,000, respectively. Regular shipments of lead-zinc ore were begun by Pine Point Mines Limited from high-grade deposits on the south shore of Great Slave Lake; trial shipments had been made late in 1964. Production of lead and zinc will increase substantially in 1966 with shipments of high-grade ore continuing and regular shipments of concentrate beginning from the 6,000-ton-a-day concentrator that started up late in 1965. Several other companies with property in the immediate Pine Point area received substantial encouragement in diamond drilling for lead-zinc deposits.







### Mineral Industry Outlook

Canada is the world's leading producer of nickel, zinc and asbestos; the second largest producer of gold, uranium, molybdenum, gypsum, selenium, sulphur and titanium; the third largest producer of iron ore, aluminum metal, cobalt, platinum metals and tellurium; fourth largest of lead, silver and magnesium; fifth largest of copper and barite; and in the over-all record ranks high for a number of other mineral commodities. The industry's output value has increased at an average annual rate of 7.6 p.c. during the past ten years and the outlook is for a continuing advance at least at this rate. Fortunately, the industry has only a few mineral commodity problems: a declining gold industry due to a cost-price squeeze, an ailing coal industry due to loss of markets and some high-cost mines, and a temporarily stagnant uranium industry awaiting new market growth. There is also a labour shortage problem which will be receiving attention in the administration of the Federal Government's new manpower policy. Possibly the most favourable current development is the intensity of mineral exploration throughout the country.

Canada has many competitors in the field of international mineral trade particularly in iron ore, copper, zinc, lead and crude petroleum (see pp. 594-596). There is no world scarcity of mineral raw materials and developments throughout the world in the past few years indicate that competition for mineral and metal markets will become even more severe. Although Canada is faced with increasing competition, it is very encouraging to note that major mineral discoveries are being made in this country each year in both long-established mining areas and in more remote locations. In addition, many smaller but still very important operations are being brought into production and others are being expanded. Thus, the value of Canada's mineral production will almost certainly exceed \$4,000,000,000 in 1967.

**28.—Detailed Mineral Production, by Province, 1964 with Preliminary Totals for 1965**

[illegible]

8.—Detailed Mineral Production, by Province, 1964 with Preliminary Totals for 1965—concluded

Mineral	Newfoundland (incl. Labrador)	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon Territory	North-west Territories	Canada	
												1964	1965*
<b>Metallics</b>													
Unrefined Uranium lb.	—	—	—	—	11,805,143	—	2,765,164	—	—	—	—	14,570,307	8,615,000
(U <sub>3</sub> O <sub>8</sub> ) \$	77,993,350	1,189,458	108,743,309	473,080,673	63,003,944	—	19,902,485	—	—	—	—	83,509,429	64,300,000
Zinc.....lb.	11,047,407	168,546	15,408,927	67,035,531	144,132,666	85,239,404	56,874,692	—	400,796,562	13,094,653	7,840,620	1,369,025,287	1,663,803,788
\$	—	—	—	—	20,426,433	12,085,508	8,059,144	—	56,792,873	1,855,512	1,111,016	193,990,897	251,234,372
<b>Non-metallics</b>	<b>9,995,363</b>	<b>14,581,437</b>	<b>1,099,685</b>	<b>158,154,242</b>	<b>21,472,923</b>	<b>2,967,919</b>	<b>38,201,998</b>	<b>18,621,938</b>	<b>19,401,496</b>	—	—	<b>284,497,000</b>	<b>310,827,059</b>
Arsenicum lb.	—	—	—	—	323,900	—	—	—	—	—	—	323,900	300,000
oxide.	—	—	—	—	16,195	—	—	—	—	—	—	16,195	15,000
Asbestos, ton	51,315	—	—	1,285,564	15,512	—	—	—	67,460	—	—	1,419,951	1,380,210
\$	6,355,578	—	—	124,923,453	2,199,918	—	—	—	11,714,494	—	—	145,193,443	139,805,322
Barite...ton	—	158,561	—	—	—	—	—	—	10,588	—	—	109,149	201,357
\$	—	1,455,028	—	—	—	—	—	—	119,370	—	—	1,574,398	2,014,859
Diatomite, ton	—	—	—	—	—	—	—	—	1,143	—	—	1,143	65,000
\$	—	—	—	—	—	—	—	—	64,555	—	—	64,555	65,000
Feldspar, ton	—	—	—	9,149	—	—	—	—	—	—	—	9,149	10,830
\$	—	—	—	212,052	—	—	—	—	—	—	—	212,052	241,621
Fluorspar, ton	2,254,060	—	—	—	—	—	—	—	4,736	—	—	2,258,796	2,546,419
\$	—	—	—	—	—	—	—	—	11,537	—	—	11,537	11,000
Gem lb.	—	—	—	—	—	—	—	—	13,804	—	—	—	14,000
stones, \$	—	—	—	—	—	—	—	—	—	—	—	—	9
Grind- ton	—	—	—	—	—	—	—	—	—	—	—	—	1,800
stone, \$	331,990	5,097,232	104,100	—	517,239	121,555	—	—	188,569	—	—	6,360,685	6,210,960
Gypsum, ton	893,434	8,081,994	215,456	—	1,376,992	374,138	—	—	581,873	—	—	11,523,937	11,438,353
\$	—	—	—	—	—	—	—	—	—	—	—	—	—
Helium, Mc.	—	—	—	—	—	—	—	—	—	—	—	—	—
\$	—	—	—	—	—	—	—	—	—	—	—	—	—
Iron ton	—	—	—	1,033	—	—	—	—	—	—	—	1,033	235
oxides, lb.	—	—	—	79,250	—	—	—	—	—	—	—	79,250	22,325
Lithia.....lb.	—	—	—	1,056,408	—	—	—	—	—	—	—	1,056,408	1,035,048
\$	—	—	—	1,155,282	—	—	—	—	—	—	—	1,155,282	1,164,060
Magnesian dolomite	—	—	—	—	—	—	—	—	—	—	—	—	—
and ton	—	—	—	—	—	—	—	—	—	—	—	—	—
brucite, lb.	—	—	—	3,569,619	—	—	—	—	—	—	—	3,569,619	4,007,241
Mica.....lb.	—	—	—	765,814	432,348	—	—	—	—	—	—	1,198,162	886,550
\$	—	—	—	79,608	6,417	—	—	—	—	—	—	86,095	29,560
Nepheline ton	—	—	—	290,300	—	—	—	—	—	—	—	290,300	328,813
syenite, \$	—	—	—	—	—	—	—	—	—	—	—	3,097,172	3,518,947
Nitrogen Mc.	—	—	—	—	3,097,172	—	—	—	—	—	—	—	—
\$	—	—	—	—	—	—	—	—	—	—	—	—	—
Peat moss ton	—	2,875	27,467	—	27,065	28,083	—	4,404	70,461	—	—	255,475	267,100
\$	—	104,609	866,861	—	573,538	1,285,016	—	222,369	2,844,310	—	—	8,399,648	8,195,214
Potash ton	—	—	—	—	—	—	858,351	—	—	—	—	1,430,000	1,430,000
(K <sub>2</sub> O). \$	—	—	—	—	—	—	31,161,954	—	—	—	—	31,161,954	54,400,000





## Subsection 1.—Metals

The metallic minerals of greatest dollar value to Canada during 1965 were, in order: nickel, iron ore, copper, zinc, gold, lead, uranium and silver. These eight metals, which accounted for almost 95 p.c. of the total value of metal production in 1965, and several other items of importance are dealt with separately below.

**Nickel.**—Canadian nickel production in 1965 was 261,155 tons valued at \$435,332,054, a production increase of 14 p.c. over 1964. Canada maintained its position as the world's leading nickel producer but higher production in the Soviet Union, New Caledonia and Cuba reduced Canada's portion to about 50 p.c. Its leading producers—The International Nickel Company of Canada, Limited, Falconbridge Nickel Mines Limited, and Sherritt Gordon Mines Limited—are among the world's largest.

Near Sudbury in Ontario, International Nickel operated eight mines—the Creighton, Frood-Stobie, Garson, Levack, Murray, Crean Hill and Macleannan underground mines and the Clarabelle open pit—and had five under development. Also near Sudbury, Falconbridge operated six mines—Falconbridge, East, Onaping, Hardy, Fecunis and North—and had one under development. (See also p. 546.) In Manitoba, Sherritt Gordon's Lynn Lake mine operated at 3,800 tons daily. Nickel matte was imported to supplement the concentrates delivered from Lynn Lake to the Fort Saskatchewan, Alta., refinery. International Nickel was developing the Birchtree and Soab mines for production in the Thompson district to supplement production from its mine at Thompson where the company operates the world's only integrated nickel mining-concentrating-smelting-refining facility.

Smaller nickel-mining operations were carried out in Quebec, Ontario and British Columbia. In Quebec, Marbridge Mines Limited, in LaMotte Township, produced a bulk nickel-copper concentrate for treatment at Falconbridge's smelter, and Lorraine Mining Company Limited, which started production in March at its nickel-copper mine near Belleterre, shipped about 34,000 tons of concentrate to International Nickel for smelting. In northwestern Ontario, the Werner Lake mine of Metal Mines Limited produced 19,094 tons of bulk nickel-copper concentrate which was shipped to International Nickel for smelting. Giant Mascot Mines, Limited, near Hope, B.C., produced 18,000 tons of nickel-copper concentrate for export to Japan.

Nickel prices remained stable during the year. The duty of  $1\frac{1}{4}$  cents a pound on nickel entering the United States was suspended and the price to United States customers was reduced from 79 to  $77\frac{3}{4}$  cents a pound. The price to Canadian consumers remained at 84 cents a pound. Both prices were f.o.b. Port Colborne, Ont.

## 9.—Producers' Shipments of Nickel, by Province, and Total Value 1956-65

Year	Quebec	Ontario	Manitoba	British Columbia	Northwest Territories	Canada	
						Quantity	Value
	tons	tons	tons	tons	tons	tons	\$
1956.....	—	167,576	10,939	—	—	178,515	222,204,860
1957.....	—	177,396	10,034	—	528	187,958	258,977,306
1958.....	—	127,144	9,778	704	1,933	139,559	194,142,011
1959.....	—	173,964	10,139	531	1,921	186,555	257,008,801
1960.....	—	201,650	9,059	1,890	1,907	214,506	295,640,279
1961.....	—	196,218	32,978	2,090	1,705	232,991	351,261,720
1962.....	1,540	166,582	61,482	1,738	900	232,242	383,784,622
1963.....	2,506	149,089	63,585	1,850	—	217,030	360,392,655
1964.....	2,338	162,094	62,365	1,699	—	228,496	379,320,511
1965 <sup>p</sup> .....	3,305	192,655	63,284	1,911	—	261,155	435,332,054

**Iron Ore.**—Iron ore shipments in 1965 increased for the fourth consecutive year and amounted to 39,790,103 tons valued at \$419,393,058, an increase of 4 p.c. over the previous year. Quebec was the largest producing province, accounting for 14,781,630 tons, followed by Newfoundland-Labrador with 14,606,915, Ontario with 8,295,969, and British Columbia with 2,105,589 tons. In 1965, 16 companies were directly engaged in iron ore mining—one on the Island of Newfoundland, one in Labrador, one with mines in both Labrador and Quebec, two in Quebec, six in Ontario and five in British Columbia. In addition, four companies shipped iron ore as a by-product of base metal operations.

In Newfoundland, Dosco Industries Limited continued research on ore from its Wabana mine to find economic methods for up-grading the mines. The company continued to experience difficulty in marketing its ore because of its relatively low iron and high phosphorus and silica contents. Iron Ore Company of Canada, with direct-shipping ore from deposits on both sides of the Labrador-Quebec border at Schefferville and a concentrating-grade deposit near Labrador City, is the largest shipper, accounting for 24 p.c. of the 1965 shipments. Quebec Cartier Mining Company, the second largest, accounted for 23 p.c. Other shippers were Wabush Mines in Labrador; Hilton Mines, Ltd., in Quebec; and Algoma Ore Properties Division of Algoma Steel Corporation, Steep Rock Iron Mines Ltd., Caland Ore Company Ltd., Lowphos Ore Ltd., Marmoraton Mining Company, and Jones & Laughlin Steel Corporation, in Ontario. Oglebay Norton Company in Ontario shipped small tonnages of ore from stockpile. In British Columbia five companies shipped iron ore—Zeballos Iron Mines Limited, Coast Copper Company Limited, Texada Mines Limited, Brynnor Mines Limited and Jedway Iron Ore Limited. By-product iron ore producers were the Consolidated Mining and Smelting Company of Canada Limited (Cominco Limited), International Nickel Limited, Falconbridge Nickel, and Quebec Iron and Titanium Corporation.

Pellet shipments in 1965 amounted to 9,953,000 tons, an increase of 42 p.c. over 1964. Shipments were made by Arnaud Pellets, Pointe Noire, Que.; Carol Pellet Company, Labrador City, Labrador; Hilton Mines, Shawville, Que.; Jones & Laughlin Steel (Adams Mine), near Kirkland Lake, Ont.; Lowphos Ore Ltd., Sudbury area, Ont.; Marmoraton Mining Co., Ltd., near Marmora, Ont.; and International Nickel, Copper Cliff, Ont.

Annual iron ore productive capacity in Canada at the end of 1965 was 45,400,000 tons, 16.7 p.c. higher than in 1964. This included 15,600,000 tons of pellets, 12,400,000 tons of high-grade concentrates in addition to that used to make pellets, and 17,400,000 tons of medium-grade ores and concentrates containing less than 58 p.c. natural iron. On completion of planned iron ore pellet plants, productive capacity will be 21,400,000 tons a year in 1967 and 24,100,000 tons a year in 1968.

Two small mines in British Columbia—Orecan Mines Limited and Empire Development Company Limited—neared production at the end of 1965 and construction continued at Wesfrob Mines Limited's Moresby Island property. In Ontario, development of Dominion Foundries and Steel Limited's \$40,000,000 Sherman Mine project at Timagami was begun, with completion scheduled for 1968; its capacity will be 1,200,000 tons of pellets a year. In addition, several large projects were being considered for early development.

Canadian iron ore is consumed by steel industries in five main market areas—Canada, the United States, Britain, Japan and Western Europe. Shipments to domestic steel plants, to Japan and to Western Europe were higher in 1965 than in the previous year but those to the United States and Britain were lower. The United States is the world's largest iron ore importer and is Canada's largest market, accounting for 67 p.c. of total Canadian shipments in 1965 even though the amount shipped to that country was a million tons lower than in 1964. The decline in shipments to Britain from 3,200,000 tons in 1964 to 2,900,000 tons in 1965 was mainly the result of intensive competition from West African ores. Western European imports from Canada increased approximately 1,500,000 tons to about 2,300,000 tons in the same comparison and reflected greater consumption of high-grade concentrates and pellets, mainly in West Germany, Italy, Belgium and Luxembourg. Total Canadian exports in 1965 were 30,800,000 tons compared with 30,500,000 tons in 1964.



Canadian consumption of iron ore in 1965, at 12,200,000 tons, was up about 5 p.c. from 1964 but imports, which amounted to 4,800,000 tons, were down 8 p.c. Most imported ore came from Michigan and Minnesota, although 259,225 tons came from Brazil.

**10.—Iron Ore Shipments and Production of Pig Iron and Steel Ingots and Castings, 1956-65**

Year	Iron Ore Shipments						Production of Pig Iron	Production of Steel Ingots and Castings
	Newfound- land (incl. Labrador)	Quebec	Ontario	British Columbia	Canada			
					Quantity	Value		
	tons	tons	tons	tons	tons	\$	tons	tons
1956.....	8,463,572	7,956,549	5,558,203	369,954	22,348,278	160,362,118	3,568,203	5,301,202
1957.....	8,174,779	8,872,948	4,867,105	357,342	22,272,174	167,221,425	3,718,350	5,038,149
1958.....	5,390,775	6,030,325	3,644,952	630,271	15,726,323	126,131,181	3,059,579	4,359,466
1959.....	6,105,819	11,515,169	6,018,089	849,248	24,488,325	192,666,101	4,182,775	5,901,487
1960.....	7,611,365	7,457,971	5,325,197	1,156,297	21,550,830	175,082,523	4,298,849	5,809,108
1961.....	7,611,340	5,639,931	5,772,664	1,335,068	20,359,003	187,950,047	4,946,021	6,488,307
1962.....	7,986,910	11,163,982	6,414,936	1,793,848	27,359,676	263,004,217	5,276,753	7,173,534
1963.....	9,683,004	11,650,787	6,749,617	2,030,241	30,143,649	313,182,963	5,914,997	8,190,279
1964.....	12,763,575	15,512,916	8,046,769	2,002,562	38,325,822	404,951,696	6,550,835	9,132,174
1965 <sup>a</sup> .....	14,603,915	14,781,630	8,295,969	2,105,589	39,790,103	419,393,058	7,064,880	10,028,899

**Copper.**—Mine production of copper in 1965 was 517,247 tons valued at \$388,005,039, an increase of 30,347 tons and \$63,537,205 over 1964. There was a sharp increase in the production and consumption of refined copper but exports of copper in primary forms decreased. Mine production increased in all producing provinces except Saskatchewan and British Columbia. New mines were brought into production in Newfoundland, Quebec, Ontario and Saskatchewan and a number of mines were under development. Two mines were re-opened in British Columbia and one was closed by a strike.

Six smelters for the reduction of copper and nickel-copper ores and concentrates are operated in Canada. In the Sudbury district of Ontario, International Nickel operates smelters at Copper Cliff and Coniston, and Falconbridge Nickel produces nickel-copper matte at its Falconbridge smelter. Hudson Bay Mining and Smelting Co., Limited at Flin Flon, Man., smelts concentrates from its mines in Manitoba and Saskatchewan and copper concentrates from the mine of Sherritt Gordon at Lynn Lake, Man. Ores and concentrates from most of the copper mines in Ontario, Quebec and Newfoundland are smelted at the Noranda smelter of Noranda Mines Limited and the Murdochville smelter of Gaspé Copper Mines Limited, both in Quebec. Electrolytic copper refineries are operated by International Nickel at Copper Cliff and by Canadian Copper Refiners Limited, a subsidiary of Noranda Mines, at Montreal East, Que. Production of refined copper in 1965 was 434,133 tons, 6 p.c. more than in 1964.

In Newfoundland, British Newfoundland Exploration Limited started production in July from its Whalesback Pond mine; there were five producing mines and one mine under development in that province in 1965. Production totalled 17,348 tons valued at \$13,045,795, an increase of 3,733 tons and \$3,950,782 over 1964. First Maritime Mining Corporation Limited was developing the Gull Pond property for production in 1966. Output from New Brunswick's three copper producers totalled 9,696 tons valued at \$7,291,392, only slightly higher than in 1964; two mines were being developed in the Bathurst area for production in 1966.

Quebec copper mines produced a record 176,074 tons of copper valued at \$132,407,661, being 17,986 tons and \$26,804,817 more than in 1964. A major expansion program was started at the Murdochville mine and mill of Gaspé Copper Mines; when completed in 1967, capacity of the mill will be 11,000 tons of ore a day and the Copper Mountain mine will be producing about 4,000 tons of ore a day. Rio Algom Mines Limited started mill tune-up at its Mines de Poirier mine north of Amos.

Ontario's copper production also continued to increase and reached 219,183 tons valued at \$163,860,900 in 1965, 21,266 tons and \$32,402,105 more than in 1964. International Nickel produced nickel-copper ore from eight mines in the Sudbury district and was developing five mines in this area. Falconbridge operated six mines in the Sudbury area and was developing the Strathcona mine on the north rim of the basin. Texas Gulf Sulphur Company continued development of its mine near Timmins and was building a 9,000-ton-a-day concentrator for production in late 1966. Willroy Mines Limited and Lun-Echo Gold Mines Limited brought the Willecho mine near Manitouwadge into production in March and Sheridan Geophysics Limited started production in October at 500 tons of ore a day from its Coppercorp mine near Batchawana. Other copper-producing mines in Ontario include: Kam-Kotia Porcupine and McIntyre-Porcupine at Timmins; Copperfield's Temagami mine at Timagami; Noranda's Geco mine at Manitouwadge; Rio Algom's Pater mine at Spragge and North Coldstream's mine at Kashabowie.

Manitoba-Saskatchewan's two major producers, Hudson Bay Mining and Smelting and Sherritt Gordon, had a combined output of 50,247 tons valued at \$37,785,891, a very slight increase over 1964. Hudson Bay operated a central mill and smelter at Flin Flon, treating ores from the Schist Lake, Chisel Lake and Stall Lake mines in Manitoba, the Coronation mine (closed in August) in Saskatchewan and the Flin Flon mine that straddles the Manitoba-Saskatchewan boundary. The company continued exploration and development at its Osborne Lake and Anderson Lake mines near Snow Lake, Man. Sherritt Gordon produced copper concentrates at its Lynn Lake, Man., mine for shipment to Hudson Bay's smelter, and nickel-copper concentrates for shipment to its own smelter at Fort Saskatchewan, Alta. The company was preparing for underground exploration on its copper-zinc deposit at Fox Lake, some 34 miles southwest of Lynn Lake.

Production in British Columbia decreased for the second consecutive year; at 44,069 tons, production was 23 p.c. lower than in 1964 and its value, at \$33,139,640, was down 14 p.c. A prolonged strike at the Craigmont mine, a late start after the settlement of the Britannia strike in March and continued closure of the Sunro mine contributed to decreased production. The Sunro mine of Cowichan Copper Co., Ltd., on Vancouver Island, that was flooded in 1964 was rehabilitated and mill tune-up started in December 1965. The Anaconda Company (Canada) Limited rehabilitated the Britannia mine and was preparing to mine low-grade ore from the surface outcrop. Western Mines Limited was preparing its mine at the south end of Buttle Lake on Vancouver Island for production at 750 tons of ore a day in 1966. At Babine Lake, northeast of Smithers, The Granby Mining Company Limited was preparing the Granisle mine for production in late 1966. Production from the Unuk River property of Granduc Mines Limited, development of which was delayed by a disastrous avalanche, is now scheduled for late 1969. New Imperial Mines Limited near Whitehorse, Y.T., was preparing several orebodies for open-pit mining in 1966.

### 11.—Producers' Shipments of Copper, by Province, and Total Value 1956-65

NOTE.—Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
	tons	tons	tons	tons	tons	tons
1956.....	3,108	404	6	122,300	156,271	17,973
1957.....	4,536	—	5,738	112,409	171,703	18,551
1958.....	14,751	—	328	131,445	142,035	12,601
1959.....	14,989	—	—	134,912	188,272	12,945
1960.....	13,863	—	—	157,470	206,272	12,793
1961.....	15,752	—	—	149,007	211,647	12,454
1962.....	17,308	204	3,674	147,431	188,995	12,738
1963.....	14,012	237	8,964	141,400	178,960	16,980
1964.....	13,615	204	9,296	158,088	197,917	29,777
1965 <sup>a</sup> .....	17,348	205	9,696	176,074	219,183	31,011

## 11.—Producers' Shipments of Copper, by Province, and Total Value 1956-65—concluded

Year	Saskatchewan	British Columbia	Yukon Territory	Northwest Territories	Canada	
					Quantity	Value
	tons	tons	tons	tons	tons	\$
1956.....	33,116	21,682	—	—	354,860	292,958,091
1957.....	30,597	15,410	—	165	359,109	206,897,988
1958.....	37,510	6,010	—	434	345,114	174,430,930
1959.....	35,536	8,121	—	494	395,269	233,102,813
1960.....	31,785	16,559	—	520	439,262	264,846,637
1961.....	33,479	15,845	440	463	439,087	255,157,626
1962.....	32,017	54,489	215	314	457,385	282,732,696
1963.....	29,772	62,218	—	16	452,559	284,403,710
1964.....	20,442	57,561	—	—	486,900	324,467,834
1965 <sup>a</sup> .....	19,236	44,069	—	425	517,247	388,005,039

**Lead and Zinc.**—Production of lead in 1965 totalled 286,811 tons, 41 p.c. more than in 1964. Refinery production at Trail, B.C., was 186,484 tons, 35,112 tons more than in 1964. Exports of lead in concentrates totalling 106,964 tons of contained lead compared with 80,357 tons in 1964, went mainly to the United States and Belgium with lesser amounts to Britain, Italy and West Germany. Exports of refined lead amounted to 129,065 tons, 33,198 tons more than in the previous year. Lead prices were steady throughout 1965 at 15.5 cents a pound.

Zinc production continued to rise in 1965, reaching a record 831,902 tons which was 147,389 tons more than in 1964. Refinery production at Trail, Flin Flon and Valleyfield was also higher, rising from 337,728 tons in 1964 to 358,779 tons in 1965. Exports of zinc in concentrates, totalling 487,445 tons, went mainly to the United States (231,597 tons), Belgium (156,725 tons), Poland (35,113 tons), and West Germany (22,034 tons). Refined exports amounted to 264,200 tons and went mainly to the United States and Britain. Zinc prices were steady throughout 1965 at 14.5 cents a pound. The United States Government late in 1965 ended its system of import quotas on lead and zinc ores, concentrates and unmanufactured metal that had been in effect since October 1958. The controls had limited imports from Canada to 80 p.c. of the 1953-57 average.

Production of lead and zinc in the Northwest Territories rose in 1965 to 78,362 tons and 93,562 tons, respectively, from minor amounts produced the previous year. The increase was due to the start of production at Pine Point on the south shore of Great Slave Lake where high-grade ore was shipped during the year and a 5,000-ton-a-day concentrator began mill tune-up in November 1965. Lead and zinc were produced in the Yukon Territory by United Keno Hill Mines Limited, which operates mines in the Mayo district, 285 miles north of Whitehorse.

British Columbia's production was mainly from the southeastern part of the province, most of it being accounted for by Cominco Limited, which operates the Sullivan mine at Kimberley, the H.B. mine at Salmo and the Bluebell mine at Riondel; daily lead-zinc ore production from the three mines was, respectively, 10,000, 1,200 and 700 tons. Other producers in this part of the province included Canadian Exploration Limited at Salmo, Reeves MacDonald Mines Limited at Remac, and Aetna Investment Corporation Limited at Toby Creek. British Columbia's only producer of copper-zinc ore was the Britannia mine of The Anaconda Company (Canada) Ltd. There are a number of smaller lead-zinc producers in British Columbia; Cominco Limited treats concentrates from most of these properties, some from the Yukon Territory and foreign concentrates at its Trail smelter.

Zinc and lead were recovered from copper-zinc-lead ores of the Flin Flon mine straddling the Saskatchewan-Manitoba border and operated by Hudson Bay Mining and



Smelting. This company also operates the Schist Lake mine near Flin Flon and the Chisel Lake and Stall Lake mines 90 miles east of Flin Flon. Ore from all company mines is milled at Flin Flon.

In Ontario, Noranda Mines Limited (Geco Division) and Willroy Mines Limited, both at Manitouwadge, produced zinc, lead and copper concentrates; Kam-Kotia Porcupine Mines Limited at Timmins produced copper concentrates and a small tonnage of zinc concentrates. Two new mines were opened—the Willecho at Manitouwadge early in 1965 and the Zenmac near Schreiber early in 1966. At Port Maitland on Lake Erie, zinc concentrates from Ontario and Quebec mines were roasted by Sherbrooke Metallurgical Company Limited and the resulting calcine was shipped to the United States for final treatment.

Quebec's lead production showed little change from 1964 to 1965 but its zinc output rose from 236,540 tons to 275,788 tons. Production of zinc from the new Matagami Lake camp totalled 194,600 tons and a new producer in the Noranda district, Lake Dufault Mines Limited, produced about 30,000 tons of contained zinc from copper-zinc ores. Other mines in Quebec were the Normetal (copper-zinc), Quemont (copper-zinc), Manitou-Barvue (copper-zinc-lead) and East Sullivan (copper-zinc), all in the Noranda-Val d'Or area; New Calumet (zinc-lead) at Calumet Island on the Ottawa River; Coniagas (zinc-lead-silver) at Bachelor Lake, and Solbec (copper-zinc-lead) in the Sherbrooke district. The Cupra mine, just south of the Solbec, was brought into production in September 1965.

New Brunswick's production of lead and zinc was up substantially from 1964. Brunswick Mining and Smelting Corporation Limited operated its No. 12 mine near Bathurst, completing the first full year of production. Construction of a zinc-lead blast furnace by the company continued at Belledune Point, 25 miles north of Bathurst where part of the Bathurst-district concentrates will be smelted. Heath Steele Mines Limited, near Newcastle, produced zinc, copper and lead concentrates. Nova Scotia's only lead-zinc producer was Magnet Cove Barium Corporation, at Walton. In Newfoundland, regular production of lead, zinc and copper concentrates continued at the Buchans mine of American Smelting and Refining Company. Zinc was recovered from copper ore by Consolidated Rambler Mines Limited near Baie Verte.

Exploration and development were carried out in many areas during 1965. New mines were under development at Timmins, Ont., in the Joutel-Poirier district 60 miles north of Amos, Que., near Bathurst, N.B., in northern Manitoba, in northern Saskatchewan, and on Vancouver Island. Exploration programs of particular interest were carried out in the Ross River district of central Yukon Territory and in the Pine Point district of the Northwest Territories, where substantial discoveries of zinc-lead ore were announced.

**12.—Producers' Shipments of Lead from Canadian Ores, by Province, and Total Value, 1956-65**

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario
	tons	tons	tons	tons	tons
1956.....	22,788	711	474	2,873	1,505
1957.....	24,512	—	1,170	2,709	506
1958.....	23,980	—	94	3,150	1,256
1959.....	22,457	—	—	2,910	1,611
1960.....	24,022	—	—	2,669	831
1961.....	21,968	—	—	3,392	835
1962.....	25,330	2,682	1,879	4,716	1,144
1963.....	23,392	1,400	1,783	4,337	1,539
1964.....	25,415	1,669	21,716	3,954	2,027
1965 <sup>a</sup> .....	23,318	1,700	46,537	3,977	1,958

**12.—Producers' Shipments of Lead from Canadian Ores, by Province, and Total Value, 1956-65—concluded**

Year	Manitoba	British Columbia	Yukon Territory	Northwest Territories	Canada	
					Quantity	Value
	tons	tons	tons	tons	tons	\$
1956.....	—	147,701	12,802	—	188,854	58,582,651
1957.....	—	140,094	12,493	—	181,484	50,670,407
1958.....	—	147,417	10,783	—	186,680	42,413,805
1959.....	—	148,922	10,796	—	186,696	39,616,835
1960.....	1,037	166,947	10,144	—	205,650	43,926,888
1961.....	3,054	192,800	8,385	—	230,435	47,054,765
1962.....	3,792	167,641	8,145	—	215,329	42,721,341
1963.....	2,737	157,487	8,490	—	201,165	44,256,199
1964.....	1,295	134,369	10,209	3,063	203,717	54,759,110
1965 <sup>a</sup> .....	1,230	121,221	8,508	78,362	286,811	88,911,360

**13.—Producers' Shipments of Zinc, by Province, and Total Value, 1956-65**

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
	tons	tons	tons	tons	tons	tons
1956.....	34,680	2,088	531	85,973	1,227	17,904
1957.....	35,698	—	3,314	74,295	11,296	13,729
1958.....	33,870	—	3,162	56,923	46,239	11,512
1959.....	31,674	—	—	47,058	44,982	15,702
1960.....	34,208	—	—	49,807	45,230	24,390
1961.....	34,638	—	—	54,005	51,937	46,509
1962.....	32,541	757	2,498	70,737	63,132	49,920
1963.....	34,485	—	10,614	75,084	66,470	46,392
1964.....	38,982	595	54,372	236,540	72,076	42,645
1965 <sup>a</sup> .....	37,169	250	129,150	275,788	59,945	40,345

	Saskatchewan	British Columbia	Yukon Territory	Northwest Territories	Canada	
					Quantity	Value
	tons	tons	tons	tons	tons	\$
1956.....	45,380	224,323	10,526	—	422,632	125,437,344
1957.....	45,070	221,779	8,560	—	413,741	100,042,533
1958.....	48,328	217,304	7,761	—	425,099	92,501,496
1959.....	46,877	203,092	6,623	—	396,008	96,942,663
1960.....	42,703	203,833	6,702	—	406,873	108,635,003
1961.....	28,360	194,486	6,069	—	416,004	104,749,879
1962.....	30,899	206,716	5,944	—	463,144	112,080,981
1963.....	33,320	201,432	5,925	—	473,722	121,083,466
1964.....	28,437	200,399	6,547	3,920	684,513	193,990,897
1965 <sup>a</sup> .....	28,134	160,559	7,000	93,562	831,902	251,234,372

**Gold.**—Canadian gold production in the year 1965 totalled 3,608,348 oz.t. valued at \$136,142,969, down slightly from 1964. The average price for gold paid by the Royal Canadian Mint in 1965 was \$37.73 per oz.t. in Canadian funds, down from \$37.75 the year before. On May 2, 1962, the Canadian dollar was stabilized at 92.5 cents in terms of the United States dollar with a permissible fluctuation of 1 p.c. either way from the fixed value. The range in value for the Canadian dollar is thus set at \$0.916 to \$0.934 in relation to the U.S. dollar and the corresponding Royal Canadian Mint gold price between \$37.46 and \$38.22 per oz.t.

Most Canadian lode and placer gold mines receive cost assistance under the Emergency Gold Mining Assistance Act (see p. 585) but the gold mines continue to experience economic difficulties as costs of recovery maintain an upward trend. Eight lode gold mines closed in 1965 mainly due to the exhaustion of economic ore reserves. Four mines began

production and two small mines operated on an intermittent basis. In 1965, the proportion of gold derived from lode deposits declined to 81.2 p.c. from 82.2 in 1964. By-product gold from base metal ores rose to 17.6 p.c. from 16.3 p.c. and placer gold amounted to 1.2 p.c. of the total, down from 1.5 p.c. Ontario was the principal producing province in 1965, accounting for almost 54 p.c. of the total, and Quebec was second with over 25 p.c.; the Northwest Territories produced over 12 p.c. and British Columbia about 3.1 p.c.

In Ontario, production declined to 1,942,272 oz.t. from 2,155,370 oz.t. in 1964. Thirty-one lode gold mines operated in the province but two operations were small and intermittent. Four mines—Wright-Hargreaves Mines, Limited and Lake Shore Mines, Limited, both at Kirkland Lake, Broulan Reef Mines Limited and Hugh-Pam Porcupine Mines Limited, a combined operation near Timmins, and Leitch Gold Mines Limited near Beardmore—ceased operations. Lake Shore continued to operate its mill in a tailings reclamation program. Anco Mines Limited began ore shipments in 1965 from its Red Lake area mine. In the Matachewan district, Stairs Exploration and Mining Company began operations in mid-1965 with a small mill. An estimated 97,432 oz.t. of gold was recovered as a by-product from base metal ores in Ontario compared with 57,772 oz.t. in 1964. Quebec's output declined to 906,417 oz.t. in 1965 from 934,769 oz.t. in 1964. Fourteen lode gold mines operated in the province during the year. Camflo Mattagami Mines Limited near Malartic and Wasamac Mines Limited near Noranda were new producers and Bevecon Mines Limited near Val d'Or and Canadian Malartic Gold Mines Limited and Malartic Gold Fields Limited at Malartic ceased operations. Gold recovered as a by-product from base metal ores represented over 41 p.c. of the provincial total.

In the Northwest Territories, estimated production in 1965 was 452,000 oz.t., a substantial increase over the 412,879 oz.t. produced in 1964. Discovery Mines Limited, Tundra Gold Mines Limited and the Con and Ryeon mines of Cominco Limited all recorded higher lode gold production in 1965. Giant Yellowknife Mines Limited, Canada's largest lode gold mine, produced 255,024 oz.t., as compared with 266,752 oz.t. the year before. Production declined at both of British Columbia's lode gold mines—Bralorne Pioneer Mines Limited and The Cariboo Gold Quartz Mining Company Limited. The reduction at Bralorne Pioneer was mainly due to a planned decrease in the milling rate for about two months while shaft deepening was in progress. Total production from all sources in 1965 was 112,786 oz.t. compared with 139,959 oz.t. in 1964.

Manitoba and Saskatchewan combined accounted for 120,611 oz.t. in 1965, compared with 116,171 oz.t. in 1964. Production from San Antonio Gold Mines Limited, the only lode gold mine in the two provinces, declined to 24,969 oz.t. from 28,773 oz.t. in 1964. Most of the production is derived from base metal ores mined in the Flin Flon area. In the Yukon Territory, almost all of the 46,878 oz.t. produced in 1965 came from placer operations; output in 1964 was 57,844 oz.t. In Newfoundland and New Brunswick some gold was recovered as a by-product of base metal production.

#### 14.—Producers' Shipments of Gold, by Province, and Total Value, 1956-65

NOTE.—Figures from 1862 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.

Year	New- foundland	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskat- chewan
	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.
1956.....	8,213	1,279	—	1,036,059	2,513,912	120,232	82,687
1957.....	9,755	45	240	1,006,895	2,578,206	120,008	75,256
1958.....	13,381	131	52	1,044,846	2,716,514	87,356	86,590
1959.....	13,411	—	—	999,388	2,683,449	51,186	78,588
1960.....	13,515	3	—	1,035,914	2,732,673	52,762	84,775
1961.....	14,429	—	—	1,054,029	2,637,720	57,747	70,784
1962.....	13,966	—	553	993,560	2,421,249	68,259	66,034
1963.....	12,318	—	1,128	917,229	2,338,854	53,084	64,813
1964.....	16,717	63	1,623	934,769	2,155,370	69,986	46,185
1965 <sup>a</sup> .....	25,491	8	1,700	906,417	1,942,272	70,194	50,417



## 14.—Producers' Shipments of Gold, by Province, and Total Value, 1956-65—concluded

Year	Alberta	British Columbia	Yukon Territory	Northwest Territories	Canada	
					Quantity	Value
	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	\$
1956.....	119	196,692	72,001	352,669	4,383,863	151,024,080
1957.....	416	229,113	73,962	340,018	4,433,894	148,757,143
1958.....	282	210,612	67,745	343,838	4,571,347	155,334,370
1959.....	200	184,312	66,960	405,922	4,483,416	150,508,275
1960.....	191	212,859	78,115	418,104	4,628,911	157,151,527
1961.....	171	164,467	66,878	407,474	4,473,699	158,637,366
1962.....	186	159,492	54,805	400,292	4,178,396	156,313,794
1963.....	132	159,473	55,211	400,885	4,003,127	151,118,045
1964.....	59	139,959	57,844	412,879	3,835,454	144,788,388
1965 <sup>p</sup> .....	185	112,786	46,878	452,000	3,608,348	136,142,969

**Uranium.**—The uranium industry suffered its sixth consecutive annual decline in output in 1965. Total shipments were 8,615,000 lb. of uranium oxide ( $U_3O_8$ ) compared with the peak production of 31,784,000 lb. in 1959 and value of shipments at \$64,300,000 was less than one fifth of the peak year's value. Four uranium mines operated in 1965 but one, Stanrock Uranium Mines Limited, is a small producer that treats only mine water for recovery of uranium. About 79 p.c. of 1965 shipments came from three mines in the Elliot Lake camp in Ontario—Stanrock Uranium Mines Limited, Denison Mines Limited, and Rio Algom Mines Limited's Nordic mine—and the remainder came from Eldorado Mining & Refining Limited's Beaverlodge mine in northern Saskatchewan.

The Canadian Government announced in June 1965 that it was prepared to purchase uranium from companies that had previously produced uranium. Purchases would be made up to maximum stipulated quantities for a period of five years from July 1, 1965, at a price of \$4.90 a pound of  $U_3O_8$ . The program would allow companies to maintain their mines and plants in a condition to meet the expected production challenge of the future and permit the industry to produce for the next five years at roughly 8,000,000 lb. a year.

Also, in June 1965 the Government announced that from then on it was prepared to grant export permits with respect to sales of uranium only if the uranium is to be used solely for peaceful purposes, except for material still to be shipped under existing contracts. Before such sales are authorized, Canada requires an agreement with the government of the importing country to ensure, with appropriate verification and control, that the uranium is to be used for peaceful purposes only. This policy allows Canadian producers to supply uranium for reactors that are already in operation, under construction, or firmly committed for construction in other countries for the anticipated life of each reactor. In addition, the Government is prepared to authorize the export, for periods of up to five years, of reasonable quantities of uranium for the accumulation of inventory in the importing country.

Sales of small quantities of uranium, up to a maximum of 2,500 lb. in total for a country, may be made to countries not holding agreements for the peaceful uses of atomic energy. All sales whether made by the Crown corporation, Eldorado Mining and Refining Limited, or by private producers are subject to control measures administered through the Atomic Energy Control Board.

Both Eldorado and Stanrock produced mainly to meet the contracts Canada holds with the United States Atomic Energy Commission and the United Kingdom Atomic Energy Authority. Denison completed its commitments with those agencies in June 1965 and then began deliveries under the new Canadian Government stockpile program. Rio Algom had organized its contract deliveries to enable it to produce for the agencies until October 1971 but the Government program permitted the company to deliver additional volumes of uranium to stockpile, which will increase its efficiency of operation.

In November 1965, Rio Algom acquired from Dow Chemical of Canada Limited the latter's 50-p.c. interest in the capital of Rio Tinto Dow Limited and then changed the name of the new wholly-owned subsidiary to Rio Tinto Nuclear Products, Limited with plans to construct a 150-ton-a-year uranium refinery at the Nordic mine site. Rio Algom visualizes savings in producing uranium fuel products, which are now produced in Canada only by Eldorado, since it will be possible to commence production of higher grade products from the uranium while it is still in solution in the mill circuit.

The uranium industry has been encouraged by the unparalleled increase in the number of commitments to build nuclear power plants in several countries. Canada's own nuclear power program was marked by the official opening of the Pickering, Ont., reactor site where the first two 500-MWe units of a contemplated eight-unit plant will be built for The Ontario Hydro Electric Power Commission. In May 1965 it was announced that consideration was being given by Hydro-Quebec to the construction of a 250-MWe nuclear power plant. Another highlight of 1965 was the completion of a research reactor (WR-1) in November at the new Whiteshell Nuclear Research Establishment, Pinawa, Man. Meanwhile, Canada's first nuclear power station, located at Rolphton, Ont., continued to operate successfully and the opening of the 200-MWe Douglas Point plant, which was scheduled for the autumn of 1965, was delayed until late 1966 or early 1967.

Canada has reserves of 210,000 tons of  $U_3O_8$  that can be recovered in a price range of \$5 to \$10 a pound of  $U_3O_8$ . These reserves constitute one third of the western world total.

#### 15.—Quantity and Value of Producers' Shipments of Uranium ( $U_3O_8$ ), by Province, 1956-65

Year	Ontario		Saskatchewan		Northwest Territories		Canada	
	Quantity <sup>1</sup>	Value	Quantity <sup>1</sup>	Value	Quantity <sup>1</sup>	Value	Quantity <sup>1</sup>	Value
	lb.	\$	lb.	\$	lb.	\$	lb.	\$
1956.....	905,614	9,361,867	2,780,534	27,194,202	873,912	9,176,076	4,561,060	45,732,145
1957.....	7,970,598	82,940,763	4,462,552	44,561,832	838,264	8,801,769	13,271,414	136,304,364
1958.....	19,970,136	210,149,700	5,924,253	59,315,924	910,843	9,572,847	26,805,232	279,538,471
1959.....	25,492,171	268,529,993	5,372,685	54,457,321	919,333	8,155,729	31,784,189	331,143,043
1960.....	19,793,727	211,983,533	4,624,431	48,722,961	1,077,211	9,231,698	25,495,369	269,938,192
1961.....	14,970,594	151,060,610	4,310,871	44,631,014	—	—	19,281,465	195,691,624
1962.....	12,805,203	118,283,081	4,053,966	39,900,588	—	—	16,859,169	158,183,669
1963.....	12,770,421	102,951,146	3,932,645	33,957,973	—	—	16,703,066	136,909,119
1964.....	11,805,143	63,609,944	2,705,164	19,902,485	—	—	14,570,307	83,509,429
1965 <sup>a</sup> .....	6,800,000	49,200,000	1,815,000	15,100,000	—	—	8,615,000	64,300,000

<sup>1</sup> Figures for 1956 include radium salts, silver, cobalt and uranium oxides; figures for 1957-65 are for uranium oxide ( $U_3O_8$ ).

**Silver.**—With recovery of silver commencing at two new base metal mines in 1965 and several other producers completing their first full year of operation, Canada's mine output at 32,964,299 oz.t. was more than 3,000,000 oz.t. greater than in 1964. Declines in production in Nova Scotia, Manitoba, British Columbia and Yukon Territory were more than offset by increases in the Northwest Territories and the other provinces. Output in the Northwest Territories reached an all-time high as a result of the substantially increased production by Echo Bay Mines Limited. Canadian production in 1965 was valued at \$46,117,054, or more than \$4,000,000 higher than the previous year. Base metal ores accounted for 80 p.c. of the total, almost 19 p.c. came from silver-cobalt ores mined in northern Ontario and the remainder from lode and placer gold ores. Reported consumption of silver in Canada reached a record 30,170,097 oz.t. in 1965, mainly because of a large increase in the amount used in coinage; the latter was almost double the amount so used in 1964.

Canada's two largest producers of refined silver were: Canadian Copper Refiners Limited at Montreal East, Que., which recovered 9,600,000 oz.t. from the treatment of anode and blister copper, and Cominco Limited at its refinery at Trail, B.C., which recovered 6,400,000 oz.t. in the processing of lead and zinc ores and concentrates. The remainder of the output of refined silver was produced by Cobalt Refinery Limited in the

processing of silver-cobalt ores and concentrates at its plant at Cobalt, Ont.; by International Nickel at Copper Cliff, Ont., in the treatment of nickel-copper concentrates; by Hollinger Consolidated Gold Mines, Limited at Timmins, Ont., from gold precipitates; and by the Royal Canadian Mint at Ottawa, from gold bullion.

The two largest sources of silver in Canada are the Hector-Calumet, Elsa, Keno and Silver King silver-lead-zinc mines in the Yukon Territory about 200 miles north of Whitehorse, operated by United Keno Hill Mines Limited, and the Sullivan lead-zinc-silver mine at Kimberley, B.C., operated by Cominco Limited. Other important producers of by-product silver included Echo Bay Mines Limited near Port Radium, N.W.T.; Hudson Bay Mining and Smelting Co., Limited at Flin Flon, Man.; Noranda Mines Limited (Geco Division) at Manitouwadge, Ont.; Lake Dufault Mines, Limited near Noranda, Que.; Brunswick Mining and Smelting Corporation Limited near Bathurst, N.B.; and American Smelting and Refining Company (Buchans Unit) in Newfoundland. Some 6,100,000 oz.t. of silver were derived from silver-cobalt ores mined in the Cobalt and Gowganda areas of Ontario, the largest producer being Silverfields Mining Corporation Limited with an output exceeding 1,000,000 oz.t.

#### 16.—Producers' Shipments of Silver, by Province, and Total Value, 1956-65

NOTE.—Figures from 1887 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.

Year	Average Price per oz.t. (Canadian funds)	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
	cts.	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.
1956.....	89.67	957,125	92,859	18,182	4,033,966	6,626,447	430,124
1957.....	87.37	1,196,414	1	379,173	3,645,856	6,910,130	407,834
1958.....	86.81	1,257,078	4	51,139	3,908,311	9,815,257	320,759
1959.....	87.78	1,125,110	—	—	4,108,241	10,540,856	373,827
1960.....	88.91	1,271,126	—	—	4,115,105	11,220,823	501,637
1961.....	94.26	1,145,105	—	—	4,315,844	8,870,402	767,543
1962.....	116.50	1,181,648	724,245	178,521	4,603,019	9,383,445	847,879
1963.....	138.40	981,005	423,189	332,472	4,441,644	9,601,621	766,976
1964.....	140.00	1,089,748	544,224	1,439,192	4,564,559	9,929,858	727,642
1965 <sup>a</sup> .....	139.40	1,127,980	400,000	2,914,600	5,315,163	11,203,506	697,389

	Saskatchewan	British Columbia	Yukon Territory	Northwest Territories	Canada <sup>1</sup>	
	oz.t.	oz.t.	oz.t.	oz.t.	Quantity	Value
	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	\$
1956.....	1,179,110	8,801,398	6,192,703	69,916	28,431,847	25,497,681
1957.....	1,145,571	8,584,991	6,484,185	69,104	28,823,298	25,182,915
1958.....	1,299,077	8,013,428	6,415,560	72,779	31,163,470	27,053,007
1959.....	1,187,439	7,463,285	7,054,632	70,500	31,923,969	28,022,860
1960.....	1,163,845	8,447,440	7,217,361	79,473	34,016,829	30,244,363
1961.....	876,450	8,391,640	6,937,088	77,890	31,381,977	29,580,651
1962.....	762,215	6,186,937	6,482,244	72,802	30,422,972	35,442,761
1963.....	746,683	6,451,158	6,103,037	81,205	29,932,003	41,425,891
1964.....	593,320	5,280,129	5,638,712	65,223	29,902,611	41,863,655
1965 <sup>a</sup> .....	685,130	4,851,193	4,495,121	1,274,200	32,964,299	46,117,054

<sup>1</sup> Includes relatively small quantities produced in Alberta.

**Platinum Metals.**—Canadian production of the platinum metals in 1965 amounted to 452,063 oz.t. valued at \$35,678,078, an increase of 75,825 oz.t. and \$10,273,961 over 1964. The increase resulted from higher nickel production. Platinum group metals—platinum, palladium, rhodium, ruthenium, iridium and osmium—occur in Canadian nickel ores to the extent of about 0.025 oz.t. per ton of ore. In the treatment of these ores for nickel, the platinum metals follow nickel and are eventually removed as sludges from the electrolytic tanks in which nickel cathodes have been formed. The sludge is purified and sent to precious metal refineries in Britain and the United States for recovery of the platinum metals.



World markets for platinum metals were very strong in 1965. Demand in the western world outpaced supply and the extra metal had to be purchased from the Soviet Union. Half of the world's output is produced in the Soviet Union and most of the remainder in the Republic of South Africa and Canada. An erratic pattern of sales to the western world by the Soviet Union caused a wide difference between the official platinum price of about \$100 an oz.t. and the free market price of up to \$160 an oz.t.

**Aluminum.**—As a producer of aluminum metal, Canada ranks second, after the United States, in the non-communist world. At the end of 1965 Canadian smelting capacity was 913,000 tons a year. Plants of the Aluminum Company of Canada, Limited (Alcan), located at Arvida, Alma, Shawinigan and Beauharnois in Quebec and at Kitimat in British Columbia, have a capacity of 808,000 tons; a further 24,000 tons of capacity will be completed at Kitimat in 1966. Alcan production was 728,400 tons in 1965. Canadian British Aluminium Company Limited operates a smelter at Baie Comeau, Que., having an estimated capacity of 105,000 tons a year; a plant addition and renovations will increase capacity to 175,000 tons by 1969-70. Canadian production of primary aluminum in 1965 was 840,348 tons, of which 707,512 tons were exported. Output in 1966 is expected to be about 910,000 tons. As all bauxite and alumina used by the aluminum smelters must be imported, mainly from the Caribbean area, metal production is classed in official statistical data with manufactures and not with smelter production of ores and metals of domestic origin. The export price of primary aluminum was 24.5 cents (U.S.) a pound throughout 1965 and to mid-1966. The Canadian price was 26.0 cents a pound.

**Cobalt.**—Cobalt production in 1965 was 3,798,740 lb. valued at \$8,205,278, considerably higher in both quantity and value than in the previous year. Cobalt is derived as a by-product of the smelting and refining of nickel-copper ores of Sudbury, Ont., and Lynn Lake, Man.; from nickel ores of Thompson, Man.; and from silver ores of Cobalt, Ont. International Nickel recovers cobalt from its refinery operations at Port Colborne, Ont., Thompson, Man., and Clydach, Wales. Falconbridge Nickel produces electrolytic cobalt in the refining of nickel-copper matte exported to its refinery at Kristiansand, Norway. Sherritt Gordon recovers cobalt as a by-product at its nickel refinery at Fort Saskatchewan, Alta. Cobalt Refinery Limited at Cobalt, Ont., recovers black cobalt oxide and mixed cobalt and nickel oxide from silver concentrates.

**Columbium.**—In 1965, mine production of St. Lawrence Columbium and Metals Corporation, the only Canadian producer of columbium concentrates, amounted to 2,300,000 lb. of contained  $Cb_2O_5$  in pyrochlore concentrates valued at \$2,350,000. The mine is near the town of Oka, 20 miles west of Montreal. Quebec Columbium Limited and Columbium Mining Products Limited also own large pyrochlore deposits in the Oka area. Masterloy Products Limited, Ottawa, Ont., is the only Canadian manufacturer of ferrocolumbium, which is sold in Canada and the United States.

**Magnesium.**—At the end of 1965, Dominion Magnesium Limited, the sole producer of magnesium in Canada, had a production capacity of 11,500 tons a year. The smelter at Haley, Ont., contains the largest installation of vacuum equipment in the world. The recovery process involves calcining an exceptionally pure dolomite quarried near the smelter, mixing the calcine with ferrosilicon from Beauharnois, and reducing the mixture in special retorts under vacuum at high temperature. Production was 11,133 tons in 1965. Much of the output is exported to Britain and West Germany. Canadian consumption of primary magnesium, including 1,641 tons of imports, was 4,473 tons in 1965. Free World production in 1965 was estimated at 170,500 tons.

**Molybdenum.**—Molybdenum production in 1965 amounted to 9,691,220 lb. valued at \$16,759,950. Approximately 2,200,000 lb. of the molybdenum produced was converted, by roasting, to molybdc oxide ( $MoO_3$ ), some of which was converted to ferromolybdenum; the remainder of the production was exported in molybdenite ( $MoS_2$ ) concentrates.

Canadian production in 1965 came from four mines in Quebec and three in British Columbia. Quebec producers were the Lacorne mine of Molybdenite Corporation of Canada Limited near Val d'Or; the mines of Preissac Molybdenite Mines Limited and of Anglo-American Molybdenite Mining Corporation, both in the Lake Preissac area just north of Cadillac; and the Murdochville mine of Gaspé Copper Mines Limited. The first three mine molybdenite as a primary product and recover bismuth as a by-product; the Murdochville mine is a copper operation and molybdenite is recovered as a by-product. In British Columbia, Brynnor Mines Limited (Boss Mountain) and Endako Mines Limited are primary producers of molybdenite; Red Mountain Molybdenum Mines Ltd. (Torwest) and British Columbia Molybdenum Limited (Alice Arm), with mine development under way, will be primary producers; Bethlehem Copper Corporation Limited recovers molybdenite as a by-product from copper ores mined near Ashcroft in the Highland Valley.

Molybdenite Corporation, Preissac and Endako all operate roasting facilities to produce molybdic oxide at their mine sites; Masterloy Products Limited operates roasting facilities at Duparquet, Que. Masterloy and Preissac also produce ferromolybdenum, Preissac at its mine site and Masterloy at its plant near Ottawa.

**Selenium and Tellurium.**—Selenium production in 1965, totalling 504,109 lb. valued at \$2,435,704, was 8 p.c. higher than in 1964; tellurium output at 86,264 lb. valued at \$554,793 was 10 p.c. higher. These metals are recovered from the anode muds resulting from the electrolytic refining of copper at the plants of Canadian Copper Refiners Limited at Montreal East, Que., and International Nickel at Copper Cliff, Ont.

**Titanium.**—Ilmenite, an iron-titanium oxide, is mined in the Allard Lake and St. Urbain areas of Quebec. The Allard Lake ore, mined by Quebec Iron and Titanium Corporation, is smelted by the company in electric furnaces at Sorel, Que., to produce high-titania slag and pig iron. The slag is sold to producers of titanium-based pigments in Canada, the United States, Britain, Japan and other countries. Ilmenite mined at St. Urbain by Continental Titanium Corporation is used as heavy aggregate in weighting oil and gas transmission pipelines and in shielding nuclear reactors. The value of titanium-bearing materials shipped in 1965 as ore, heavy aggregate and titanium-bearing slag was at an all-time high of \$22,425,094, compared with \$21,270,144 in 1964.

**Tungsten.**—Tungsten production in 1965 was approximately 3,000,000 lb., all from Canada Tungsten Mining Corporation Limited whose mine is just east of the Yukon-Northwest Territories boundary and 135 miles north of Watson Lake. This is one of the highest grade tungsten deposits in the world and its production moved Canada into third place, following the United States and South Korea, among the non-communist producers.

**Vanadium.**—Canadian Petrofina Limited recovers vanadium pentoxide ( $V_2O_5$ ) at its refinery at Pointe aux Trembles, Que. The capacity of this plant, which started operations in 1964 and is the only vanadium-recovery facility in Canada, will be increased in 1966 from 500 lb. of  $V_2O_5$  a day to 1,000 lb. a day.

### Subsection 2.—Industrial Minerals

The total value of industrial minerals produced in Canada continued its upward trend in 1965. Producers' shipments of non-metallic minerals were valued at \$311,000,000 and of clay products and other structural materials of mineral origin at \$423,000,000 for a grand total of \$734,000,000, approximately 7 p.c. above 1964. Production records were established for a number of minerals including cement, nepheline syenite, potash, salt, silica, sodium sulphate and sulphur; however, production of several of the larger tonnage minerals, notably asbestos, gypsum, stone, and sand and gravel, was slightly below 1964 levels. Highlights of the more important developments during the year are reviewed below.

**Asbestos.**—Following six years of successive increases, the 1965 output of asbestos in Canada dropped almost 3 p.c. below that of the previous year to 1,380,210 tons valued at \$140,000,000; production in Quebec, which produces about 90 p.c. of the total, and Ontario was lower but that in Newfoundland increased 10 p.c. and that in British Columbia 26 p.c. Although the demand for most grades remained good during the year, Canadian asbestos is experiencing competition with fibre from other countries, including the Soviet Union, especially in overseas markets. Production in Russia is now estimated to be slightly ahead of Canadian output. The traditional source of asbestos in Russia has been from deposits at Sverdlovsk but two other sources being developed will increase substantially the production potential of and presumably the exports from that country. Mainly because of the expansion of the Russian industry, Canadian production has been growing at a lower rate than world output and in 1965 accounted for only 39 p.c. of the estimated 3,500,000-ton world total.

Asbestos Corporation Limited is proceeding with the development of a large asbestos deposit at Asbestos Hill, 40 miles south of Deception Bay in the Ungava area of Quebec, at an estimated cost of \$50,000,000. It is expected that this property will be brought into production in 1970 with a capacity of 100,000 tons of fibre per annum. Ore reserves exceed 20,000,000 tons.

Yukon Territory may soon join the ranks of asbestos producers. Cassiar Asbestos Corporation is preparing the Clinton Creek deposit for operation in 1968. It is located 40 miles northwest of Dawson and is expected to produce 40,000 tons of fibre per annum. Ore reserves are estimated to exceed 12,000,000 tons. In British Columbia, exploratory work is continuing on the Kutcho Creek property, 60 miles southeast of the Cassiar mine. In Ontario, an asbestos deposit in Reeves township, 40 miles southwest of Timmins, is under development. Canadian Johns-Manville Company has in hand an underground exploration program to prove up this interesting occurrence. The only production of asbestos recorded in Ontario in 1965 was from Hedman Mines Ltd., east of Matheson.

Recently there has been considerable interest in the development of new uses for asbestos. The addition of short-fibre asbestos to asphalt road-paving mixtures is reported to reduce cracking of the road surface and lengthen the pavement life; a project at the University of Florida has indicated that heat-resistant paper can be made from a mixture of asbestos and other inorganic fibres and Union Carbide Corporation has developed a special grade of asbestos from its California operation that is reported to be an effective addition to cellulose sulphite pulp in conventional paper-making.

### 17.—Quantity and Value of Producers' Shipments of Asbestos, 1956-65

NOTE.—Figures from 1896 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Quantity	Value	Year	Quantity	Value
	tons	\$		tons	\$
1956.....	1,014,249	99,859,969	1961.....	1,173,695	128,955,900
1957.....	1,046,086	104,489,431	1962.....	1,215,814	130,281,966
1958.....	925,331	92,276,748	1963.....	1,275,530	136,956,180
1959.....	1,050,429	107,433,344	1964.....	1,419,851	145,193,443
1960.....	1,118,456	121,400,015	1965.....	1,380,210	139,805,322

**Potash.**—Potash mining is a recent development in Canada, the first output being recorded in 1962, valued at \$3,000,000. By 1965, the three Canadian producers in Saskatchewan had a total productive capacity of 1,820,000 tons of  $K_2O$  a year and produced 1,430,000 tons valued at \$54,000,000, although all three were not in operation for the full year and one plant was expanded late in the year.



During 1965, potash mine development was under way by six companies. Four shafts were being sunk, preliminary drilling of freeze holes was under way for six other shafts, two refineries were under construction and four additional refineries were being designed. Start of development by two, and possibly more, companies is expected in 1966. These projects indicate a Canadian potash productive capacity of 2,500,000 tons of  $K_2O$  in 1968, 7,000,000 tons in 1970, and 9,000,000 tons in 1975, although this achievement will depend on the successful meeting of the construction schedules laid out as well as on continued strength in potash markets. World potash consumption increased more than 10 p.c. in 1965, a rate much higher than normal, to set a new demand peak and, despite high rates of production throughout the world, shortages occurred in some areas and prices increased slightly. Although future markets cannot be guaranteed, there is good reason to believe that demand for all fertilizer materials will continue to increase at a higher rate than the average of the past 20 years. The enormous reserves of high-grade ore available in Saskatchewan assure producers of a dominant place in the world potash industry.

**Salt.**—The output of salt continued its upward trend in 1965, reaching a high point in quantity. All producing provinces recorded increases but Ontario continued to account for 84 p.c. of the total tonnage. Rock salt is mined in Nova Scotia and Ontario; brine wells are operated in Nova Scotia, Ontario, Manitoba, Saskatchewan and Alberta. It is of interest to note that salt is also a by-product of the potash operations in Saskatchewan, more than one ton of salt being produced for every ton of refined potash. By 1970, when potash production is expected to approach 12,000,000 tons of product (KCl) annually, the rate of production of by-product salt will probably exceed 18,000,000 tons. However, major markets for this material are lacking; although research into utilization in road and soil stabilization programs is under way and small quantities are used for ice control during winter months, large tonnages will continue to accumulate at increasing rates as new potash mines are developed and brought into production.

#### 18.—Producers' Shipments of Salt, by Province, and Total Value, 1956-65

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Year	Nova Scotia	Ontario	Manitoba	Saskat- chewan	Alberta	Canada	
						Quantity	Value
	tons	tons	tons	tons	tons	tons	\$
1956.....	132,539	1,347,729	21,068	42,814	46,654	1,590,804	12,144,476
1957.....	122,763	1,538,805	19,372	43,684	46,935	1,771,559	13,989,703
1958.....	125,872	2,126,483	20,560	46,511	55,766	2,375,192	14,989,542
1959.....	120,225	3,036,230	23,547	48,776	61,198	3,289,976	18,034,522
1960.....	163,901	3,007,599	21,925	49,064	72,431	3,314,920	19,355,658
1961.....	225,875	2,861,705	23,103	51,964	83,880	3,246,527	19,552,006
1962.....	312,519	3,155,589	25,010	54,931	90,729	3,638,778	21,927,135
1963.....	356,902	3,187,491	24,883	56,301	96,417	3,721,994	22,316,565
1964.....	448,808	3,335,683	27,744	74,952	101,411	3,988,598	20,203,742
1965 <sup>p</sup> .....	469,000	3,649,000	30,700	77,000	105,400	4,331,100	21,564,734

**Sulphur.**—"Sour" natural gas found in Alberta and British Columbia is the source of most of the elemental sulphur produced in Canada, other sources being smelter gas and pyrites. In all forms, sulphur production amounted to some 2,770,000 tons, of which sour gas was the source of 69.0 p.c. and the others 18.5 p.c. and 12.5 p.c., respectively. During 1965 elemental sulphur was produced at 10 plants in Alberta and at one plant in British Columbia. Total shipments amounted to 1,908,000 tons. A small amount of elemental sulphur is also produced at several oil refineries in Eastern Canada, where sour gas from refining processes is used as a source material.

Elemental sulphur productive capacity in Canada is now in excess of 2,500,000 tons a year and new capacity is expected to be in operation during 1966 and in later years. In addition to the normal sour gas sources, there are some very high concentrations of  $H_2S$  which will become sources of sulphur when production problems are solved. Also, production of oil from the Athabasca oil sand deposits in 1968 will contribute some 100,000 tons of sulphur annually.

World demand for sulphur is increasing and at present exceeds annual production. Shortages exist in some areas and prices have increased and may be forced to even higher levels to encourage the production of this essential element. Canada is now one of the major producers of elemental sulphur and occupies a strong competitive position in world markets because most of its production is a co-product of operations conducted for other purposes.

**19.—Quantity and Value of Sulphur Produced from Smelter Gases and in Pyrite and Pyrrhotite Shipments, and of Elemental Sulphur Sales, 1956-65**

Year	Sulphur in Smelter Gases		Producers' Shipments Pyrite and Pyrrhotite			Sales of Elemental Sulphur <sup>1</sup>	
	Quantity	Value	Gross Weight	Sulphur Content	Value	Quantity	Value
	tons	\$	tons	tons	\$	tons	\$
1956.....	236,088 <sup>2</sup>	2,323,590	1,046,740	473,605	4,538,785	34,784	..
1957.....	235,123 <sup>2</sup>	2,322,067	1,166,416	515,096	4,808,228	93,338	..
1958.....	241,055 <sup>2</sup>	2,361,252	1,191,731	512,427	4,248,668	94,377	1,872,832
1959.....	277,030 <sup>2</sup>	2,716,416	1,099,564	..	3,433,095	145,656	2,620,787
1960.....	289,620 <sup>2</sup>	2,854,623	1,032,288	..	3,316,378	274,359	4,298,906
1961.....	277,056 <sup>2</sup>	2,708,110	517,258 <sup>3</sup>	..	1,830,566	394,762	7,287,881
1962.....	292,728 <sup>2</sup>	3,089,537	517,308 <sup>3</sup>	..	1,879,584	695,098	9,286,999
1963.....	353,243 <sup>2</sup>	3,488,181	476,438 <sup>3</sup>	..	1,643,629	1,249,887	13,380,182
1964.....	443,448 <sup>2</sup>	4,261,912	351,850 <sup>3</sup>	..	1,126,167	1,788,165	18,637,597
1965 <sup>3</sup> .....	513,122 <sup>2</sup>	5,055,120	352,808 <sup>3</sup>	..	1,889,226	1,907,723	23,481,947

<sup>1</sup> Recovered from sour natural gas and nickel sulphide ores. zinc sulphide concentrates at Arvida and Port Maitland. iron residue or sinter.

<sup>2</sup> Includes sulphur in acid made from roasting

<sup>3</sup> Excludes pyrite and pyrrhotite used to produce

**Gypsum.**—Crude gypsum production continued at a high level in 1965 although, at 6,200,000 tons, it was slightly below that of 1964, the record year. Six provinces produce gypsum but about 77 p.c. of the total output is mined, mostly from open-pit operations, in Nova Scotia and is exported to gypsum product plants in the eastern United States.

In 1965 a new underground mine, the fourth in Canada, was brought into production by Western Gypsum Company near Silver Plains, 35 miles south of Winnipeg. This mine, which produces about 500 tons per day, is the chief source of crude gypsum for Western's gypsum products plant at Winnipeg; reserves are estimated at 20,000,000 tons. Elsewhere in Western Canada, interest in gypsum is at a high level. A United States firm is conducting feasibility and market studies with a view to exploiting gypsum deposits along the banks of the Lussier River in southeastern British Columbia, deposits that are reported to contain over 100,000,000 tons of good-quality gypsum. Interest is also being shown in the Peace River gypsum deposits of Wood Buffalo Park in northern Alberta. Under present legislation these deposits, being within a National Park, are not available to mining but negotiations are under way between the federal and provincial governments to transfer part of Wood Buffalo Park to the Province of Alberta with, perhaps, some easing of mining restrictions.

Although no new mining operations were established in Eastern Canada during the year, several companies were actively engaged in exploration programs in Nova Scotia.

## 20.—Producers' Shipments of Gypsum, by Province, and Total Value, 1956-65

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1943-44 edition.

Year	New-foundland	Nova Scotia	New Brunswick	Ontario	Manitoba	British Columbia	Canada	
							Quantity	Value
	tons	tons	tons	tons	tons	tons	tons	\$
1956.....	37,000	4,144,147	86,104	366,956	185,986	75,618	4,895,811	7,260,236
1957.....	29,465	3,842,027	93,249	379,621	183,708	49,422	4,577,492	7,745,105
1958.....	36,307	3,149,719	105,749	425,733	176,123	70,498	3,964,129	5,189,159
1959.....	37,720	5,036,411	98,250	412,100	200,139	94,010	5,878,630	8,393,703
1960.....	34,346	4,490,427	90,892	355,603	122,063	112,400	5,205,731	9,498,711
1961.....	40,699	4,113,188	85,330	425,287	122,233	153,300	4,940,037	7,750,748
1962.....	83,992	4,451,072	91,835	435,140	122,870	147,900	5,332,809	9,349,775
1963.....	232,259	4,910,536	80,544	439,206	131,767	160,954	5,955,266	11,237,952
1964.....	331,990	5,097,232	104,100	517,239	121,555	188,569	6,360,685	11,523,937
1965 <sup>p</sup> .....	422,000	4,806,000	100,800	515,000	162,000	205,160	6,210,960	11,438,353

**Sodium Sulphate.**—Production of sodium sulphate (salt cake) from alkali lake basins in Saskatchewan has increased steadily from 157,800 tons in 1957 to 346,000 tons in 1965. Demand for sodium sulphate, mainly for use in the production of kraft paper, has increased and expansion in the kraft paper industry indicates further increases in consumption. Operations in Saskatchewan are at near-capacity; the five producing plants have a total output capability of about 400,000 tons a year. The construction of three new plants, located at Cabri, Alsask and Fox Valley in the southern portion of the province, will increase that capability by about 300,000 tons a year, with initial production scheduled for 1967.

**Structural Materials.**—To keep pace with the steadily upward climb of construction in Canada, which reached \$9,900,000,000 in 1965, the total output of structural materials recorded a new high in that year with a total value of \$423,000,000, a figure 5 p.c. above the previous record attained in 1964. The large production of cement is particularly significant.

The use of lightweight aggregates made from expanded clay and shales is gaining ground. Several multi-storey buildings have been erected in Toronto using lightweight structural concrete and the lightweight aggregate industry in Montreal is striving to gain a share of the local concrete aggregate market. The wider acceptance of pre-cast concrete exterior wall panels has created a greater demand for coloured rock chips for use in exposed aggregate applications with white cement mortar.

In addition to pre-cast structural elements, such as roof and floor planks, wall panels and pre-stressed girders and beams, which are now commonly used in building construction, complete prefabricated concrete housing units are being produced on assembly lines to facilitate the speedy erection of multi-storey housing blocks. A dramatic demonstration of the potential of such mass production in the building industry is the \$13,500,000 project of Habitat 67 in Montreal. The zig-zag complex will contain 158 dwelling units consisting of 354 pre-cast concrete boxes (38.5' x 17.5' x 10') stacked, bolted and stressed together in a 12-storey pyramidal structure. Fibreglass utility units—kitchens, washrooms, bathrooms and closets—are also prefabricated and installed complete within the concrete boxes.

**Cement.**—The production volume of the Canadian cement industry in 1965 amounted to over 8,400,000 tons of portland cement, 7.4 p.c. above the 1964 output. Two new cement plants were completed during the year, adding 3,400,000 bbl. to the annual productive capacity: one, a \$14,000,000 plant with a capacity of 1,400,000 bbl. of cement a year, is located at Brookfield, N.S., and is operated by Maritime Cement Company, a subsidiary of Canada Cement Company Limited; the other is the \$16,000,000 Tuxedo plant of the Inland Cement Company, located at Winnipeg, Man. Expansions totalling



about \$27,000,000 were carried out on existing facilities: by addition of another kiln, the Villeneuve, Que., plant of the St. Lawrence Cement Company and the Picton, Ont., plant of Lake Ontario Cement Limited each doubled production capacity; also, about 2,000,000 bbl. of capacity was being added by the installation of a second kiln at the Montreal plant of Miron Company. The two new plants and the expansion of existing plant raised the annual rated capacity of the industry to 67,500,000 bbl. of portland cement at the end of 1965, an increase of 18 p.c. over rated capacity at the end of 1964. Plant expansions for completion in 1966 include the addition of a 1,000,000-bbl. kiln at Canada Cement's Havelock, N.B., plant, which will double its capacity; a new \$5,500,000 clinker-grinding mill at Floral near Saskatoon, Sask.; and a new Independent Cement Inc. plant at Joliette, Que., with an annual production capacity rated at 2,500,000 bbl.

Other additions to the industry are planned for the near future: a \$35,000,000, 3,000,000-bbl. integrated plant of the Lafarge Cement Quebec Ltd., at St. Constant, a few miles south of Montreal; the addition of a 3,250,000-bbl. kiln to the Woodstock, Ont., plant of the Canada Cement Company, which will raise its rated annual capacity to about 6,500,000 bbl.; expansion by the St. Lawrence Cement Company of its plant at Clarkson, Ont., by the addition of a new kiln and the installation of some most unusual and original machinery, which will raise the annual rated capacity of this plant to 10,000,000 bbl. by the end of 1967 and make it the largest cement manufacturing plant in Canada; and the installation of a new kiln by Ocean Cement Limited at their Bamberton plant on Vancouver Island, raising its annual rated capacity to 4,800,000 bbl. Thus, the annual rated capacity of domestic plants by the end of 1967 will be about 85,000,000 bbl., an increase of about 26 p.c. over the industry's capacity scheduled for 1966.

There is a trend toward the use of white cement in building designs; although none is being manufactured in Canada, some is ground here from imported white cement clinker.

## 21.—Producers' Shipments and Value, Imports, Exports and Apparent Consumption of Cement, 1956-65

NOTE.—Figures from 1910 are given in the corresponding table of previous Year Books beginning with the 1939 edition.

Year	Shipments (sold or used)		Imports <sup>1</sup>	Exports	Apparent Consumption <sup>2</sup>
	tons	\$	tons	tons	tons
1956.....	5,021,683	75,233,321	677,616 <sup>3</sup>	124,561	5,574,738
1957.....	6,049,098	93,167,477	92,380	338,316	5,803,162
1958.....	6,153,421	96,414,142	41,550	141,250	6,053,721
1959.....	6,284,486	95,147,798	29,256	303,126	6,010,616
1960.....	5,787,225	93,261,473	22,478	181,117	5,628,586
1961.....	6,205,948	103,923,644	1,381	249,377	5,957,952
1962.....	6,878,729	113,233,726	2,973	219,164	6,662,538
1963.....	7,013,662	118,614,929	160	272,803	6,741,019
1964.....	7,847,384	130,704,220	250	297,669	7,549,965
1965 <sup>3</sup> .....	8,426,971	144,582,127	90	334,887	8,092,174

<sup>1</sup> Standard portland cement, other than white.

<sup>2</sup> Shipments plus imports less exports.

<sup>3</sup> Includes imported clinker,

**Sand and Gravel.**—Deposits of sand and gravel are numerous throughout Eastern Canada, with the exception of Prince Edward Island where gravels are scarce. The local needs for these materials are usually supplied from the nearest deposits as their cost to the consumer is governed largely by the length of haul. This accounts for the large number of small pits and the small number of large plants in operation. Every province except New Brunswick and Prince Edward Island produces natural bonded sand but some grades particularly suitable for certain industries command much higher prices than ordinary sand. The greater part of the sand and gravel output is used in road improvement, concrete works or as railway ballast, and most of the commercial plants are equipped for producing crushed gravel, a product that can compete with crushed stone. Shipments in 1965 were slightly lower than in 1964, although they were valued about \$4,000,000 higher.

## 22.—Producers' Shipments of Sand and Gravel, by Province, and Total Value, 1956-65

Year	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	tons	tons	tons	tons	tons	tons
1956	2,490,580	..	1,675,458	6,140,029	37,175,708	61,436,363
1957	2,796,273	..	1,933,070	7,342,928	40,913,961	66,129,158
1958	4,062,985	..	2,333,792	4,015,976	40,507,787	67,469,064
1959	4,825,724	5,244,968	8,032,122	5,093,496	42,449,734	73,981,703
1960	3,912,533	474,184	8,717,693	6,184,924	46,255,963	77,660,533
1961	3,383,724	544,497	5,574,377	5,014,234	44,126,199	70,208,199
1962	4,250,942	531,196	4,375,842	5,128,365	44,000,000	76,600,813
1963	4,640,993	629,475	6,633,581	4,417,611	42,375,911	80,259,750
1964	4,657,737	608,923	6,562,341	4,699,626	41,500,000	76,917,396
1965 <sup>a</sup>	4,590,194	526,850	6,505,874	5,141,543	44,000,000	77,813,712

	Manitoba	Saskatchewan	Alberta	British Columbia	Canada	
					Quantity	Value
	tons	tons	tons	tons	tons	\$
1956	6,883,026	6,466,810	10,522,441	16,010,853	148,801,268	81,957,352
1957	6,647,280	6,565,563	11,801,422	15,699,857	159,829,512	91,939,354
1958	9,997,546	5,380,151	13,226,668	13,216,976	160,210,945	96,282,363
1959	9,261,553	5,898,136	13,271,695	17,064,615	185,123,746	104,651,461
1960	10,860,566	8,952,539	13,385,970	15,669,293	192,074,498	111,163,886
1961	7,402,385	7,626,197	12,591,944	14,279,191	170,750,947	104,654,132
1962	9,692,025	5,317,336	13,469,848	17,879,395	181,245,762	118,603,283
1963	9,653,471	7,368,017	16,139,744	17,451,950	189,570,503	123,854,254
1964	9,871,883	9,266,648	16,777,687	19,929,117	193,791,358	125,232,132
1965 <sup>a</sup>	9,780,627	8,980,463	14,858,291	20,659,821	192,857,375	129,329,647

**Stone.**—The stone industry in Canada has two main divisions—stone quarrying and the stone products industry. The granite, limestone, marble, sandstone and slate quarries yield high-grade structural and decorative materials and also supply requirements for chemical and other allied industries but the major part of the tonnage produced is crushed stone. Shipments in 1965 continued the upward trend in evidence over the past ten years.

23.—Producers' Shipments of Stone,<sup>1</sup> by Province, and Total Value, 1956-65

Year	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec
	tons	tons	tons	tons	tons
1956	327,943	..	408,952	2,129,109	11,153,206
1957	348,373	..	434,726	1,285,811	16,053,665
1958	282,439	..	435,047	2,100,687	16,963,511
1959	352,231	1,700,000	1,393,668	2,119,136	20,437,243
1960	380,843	750,000	914,937	1,883,867	20,394,509
1961	322,820	225,000	1,021,880	2,957,886	22,648,010
1962	227,707	225,000	548,834	2,950,906	24,173,016
1963	382,260	225,000	457,525	4,416,799	30,003,825
1964	285,357	350,000	504,434	3,058,061	37,805,163
1965 <sup>a</sup>	82,186	500,000	999,776	2,329,915	36,976,743

	Ontario	Manitoba	Alberta	British Columbia	Canada	
					Quantity	Value
	tons	tons	tons	tons	tons	\$
1956	15,734,664	262,557	66,820	3,174,067	33,257,318	48,809,918
1957	17,390,438	454,972	80,565	4,233,531	40,282,081	59,197,662
1958	15,756,560	540,703	91,882	1,985,818	38,156,647	55,582,929
1959	17,288,796	526,696	528,961	2,092,804	46,439,535	60,958,784
1960	17,938,583	673,598	167,201	2,255,911	45,359,449	60,640,621
1961	18,361,843	594,921	96,753	2,709,691	48,938,804	66,567,668
1962	18,797,648	943,765	105,695	2,580,914	50,553,485	68,866,358
1963	20,402,614	3,693,144	138,894	2,935,268	62,655,329	79,883,419
1964	23,845,993	1,035,248	129,364	2,780,738	69,794,358	86,882,683
1965 <sup>a</sup>	23,263,280	734,125	146,809	4,123,341	69,156,175	88,337,479

<sup>1</sup> Excludes limestone used to make lime or cement.

**Clay Products.**—The sales value of clay products shipped in 1965 was considerably higher than in 1964. Common clays suitable for the production of building bricks and tile are found in nearly all the provinces; production is greatest in Ontario and Quebec where modernization and expansion of facilities is progressing. In 1965 a new tunnel kiln with an annual capacity of 84,000,000 bricks was added to a plant at Cooksville, Ont., and construction planned of a kiln and drier to increase the capacity of the plant at Streetsville, Ont., from 60,000,000 to 84,000,000 bricks a year. Two new whiteware plants were placed in operation in Quebec. Stoneware clays are produced largely from the Eastend and Willows areas in Saskatchewan and shipped to Medicine Hat, Alta., where, utilizing the cheap gas fuel, they are manufactured into stoneware, sewer pipe, pottery, tableware, etc. Stoneware clay also occurs in Nova Scotia and, although it has not been developed extensively for ceramic use, some is used for pottery. Two large plants and a few small plants manufacture fireclay refractories from domestic clay in British Columbia, Saskatchewan and Nova Scotia. Deposits of high-grade, plastic, white burning clays occur in northern Ontario and deposits yielding high-grade china clay have been found along the Fraser River in British Columbia but these have not been used on a commercial scale. A new kiln placed in operation at Redcliff, Alta., in 1965 is successfully firing dry-pressed bricks from local red-firing clays and Whitemud formation clays from the Cypress Hills of Alberta and Saskatchewan.

#### 24.—Value (Total Sales) of Producers' Shipments of Clay Products, by Province, 1956-65

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Year	New-foundland	Nova Scotia	New Brunswick	Quebec	Ontario
	\$	\$	\$	\$	\$
1956.....	47,145	1,196,868	975,855	9,415,703	19,173,336
1957.....	29,500	1,345,361	803,169	8,898,855	18,353,299
1958.....	58,282	1,509,536	629,921	10,675,463	22,786,291
1959.....	68,000	1,638,789	743,966	10,374,162	22,174,895
1960.....	83,435	1,673,618	705,366	8,093,038	20,191,325
1961.....	75,890	1,582,153	744,293	8,195,790	19,036,556
1962.....	142,000	1,712,503	822,400	7,450,131	20,146,786
1963.....	92,120	1,337,430	623,166	6,852,660	21,819,687
1964.....	99,038	1,541,117	697,974	6,839,772	23,723,512
1965 <sup>a</sup> .....	71,900	1,551,637	600,000	6,562,548	25,337,874
	Manitoba	Saskatchewan	Alberta	British Columbia	Canada
	\$	\$	\$	\$	\$
1956.....	754,503	1,054,071	3,038,544	2,128,955	37,784,980
1957.....	827,697	1,015,389	2,628,187	2,020,701	35,922,158
1958.....	682,943	1,158,803	2,569,170	1,639,494	41,709,903
1959.....	618,550	1,374,834	3,572,920	1,949,332	42,515,448
1960.....	813,135	1,130,332	3,551,682	1,984,607	38,226,538
1961.....	623,966	1,115,474	3,517,473	2,091,353	36,982,948
1962.....	621,275	1,354,635	3,445,687	2,121,461	37,816,878
1963.....	594,072	1,044,721	3,452,835	2,337,603	38,154,294
1964.....	519,726	1,336,383	3,787,609	2,285,454	40,830,585
1965 <sup>a</sup> .....	531,000	1,330,143	3,822,477	3,398,250	43,205,829

#### Subsection 3.—Petroleum and Natural Gas

In 1965, production of crude oil averaged 812,000 bbl. daily and output of liquid hydrocarbons extracted from "wet" natural gas amounted to 124,000 bbl. daily, comparable figures for 1964 being 750,000 bbl. and 105,000 bbl., respectively. Thus, in total, the output of all liquid hydrocarbons averaged 936,000 bbl. daily, an increase of 11 p.c. over 1964. Net production of natural gas averaged 3,623,000 Mcf. a day, an 8.7-p.c. increase over the previous year.



Alberta continued as the dominant producer of petroleum, accounting for 63 p.c. of all crude oil produced in Canada in 1965; Saskatchewan accounted for 30 p.c., British Columbia for 5 p.c. and the remainder came principally from Manitoba along with small volumes from Ontario and the Northwest Territories. Alberta also produced 93 p.c. of the country's total output of propane, butane and pentanes plus. Of the total of 124,000 bbl., 77,000 bbl. were pentanes plus, 28,000 bbl. were propane and 19,000 bbl. were butane.

The oil and gas industry drilled 3,780 wells (16,502,000 feet) in 1965, consisting of 1,574 exploratory wells (6,967,000 feet) and 2,206 field development wells (9,535,000 feet). The footage was slightly more than in 1964 when 16,082,000 feet were drilled but the number of wells completed was considerably more than the 3,569 drilled in 1964. The reduction in footage per well in 1965 was attributable almost entirely to development drilling in shallower fields.

Additions to published reserves of oil and natural gas in 1965 were much smaller than in the previous year. However, the 1964 increases were mainly the result of revisions to established fields following the introduction of pressure maintenance schemes. Newly discovered resources in 1965 were roughly twice those of 1964 but reserve estimates include only a minor portion of the new reserves discovered in northwestern Alberta. At the end of the year there were 6,711,000,000 bbl. of recoverable crude oil reserves (5,720,000,000 bbl. being in Alberta) and an additional 999,000,000 bbl. of natural gas liquids (952,000,000 bbl. being in Alberta). Reserves of natural gas amounted to 44,400,000,000 Mcf. with 36,400,000,000 Mcf. located in Alberta, 6,800,000,000 Mcf. in British Columbia and lesser quantities in other provinces. Developments under way in 1966 are expected to increase considerably the estimate of oil reserves for Alberta.

## 25.—Quantity and Value of Producers' Shipments of Crude Petroleum, by Province, 1956-65

NOTE.—Figures from 1936 are given in the corresponding table of previous Year Books beginning with the 1948-49 edition.

Year	New Brunswick		Ontario		Manitoba		Saskatchewan	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	bbl.	\$	bbl.	\$	bbl.	\$	bbl.	\$
1956.....	16,628	23,279	593,370	1,958,121	5,786,540	13,633,088	21,077,371	36,253,078
1957.....	19,401	27,161	623,666	2,160,000	6,089,743	15,467,947	36,861,089	79,325,064
1958.....	15,189	21,265	778,341	2,623,000	5,829,226	14,415,676	44,626,148	96,704,863
1959.....	14,479	20,271	1,001,580	3,194,000	5,056,075	11,619,872	47,442,498	97,731,546
1960.....	14,148	19,807	1,005,030	3,150,065	4,764,045	10,690,384	51,908,428	103,957,009
1961.....	12,024	16,833	1,149,087	3,546,740	4,480,348	10,156,000	55,860,104	115,719,791
1962.....	10,333	14,466	1,134,534	3,661,174	3,926,683	9,435,819	64,432,411	141,783,520
1963.....	7,381	10,333	1,205,376	3,459,429	3,771,163	9,188,635	71,303,893	160,226,978
1964.....	4,688	6,516	1,246,682	4,014,316	4,417,224	10,296,549	81,404,430	186,171,931
1965 <sup>a</sup> .....	3,000	4,170	1,297,000	4,176,340	5,003,000	11,661,993	87,619,000	200,384,653
	Alberta		British Columbia		Northwest Territories		Canada	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	bbl.	\$	bbl.	\$	bbl.	\$	bbl.	\$
1956.....	143,909,641	353,629,158	148,454	302,375	449,409	762,773	171,981,413	406,561,872
1957.....	137,492,316	355,555,140	340,945	763,717	420,844	294,591	181,848,004	453,593,620
1958.....	113,277,847	283,262,592	512,359	1,022,156	457,086	698,266	165,496,196	398,747,818
1959.....	129,967,312	306,917,803	866,234	1,583,129	430,319	1,025,914	184,778,497	422,092,535
1960.....	130,506,968	302,841,423	867,057	1,626,590	468,545	641,219	189,534,221	422,926,497
1961.....	157,811,712	355,530,845	1,017,826	1,859,873	516,979	730,160	220,848,080	487,560,242
1962.....	165,124,967	379,830,363	8,914,220	16,872,122	572,004	755,045	244,115,152	552,352,509
1963.....	168,214,054	416,844,350	12,528,681	24,841,518	631,229	633,754	257,661,777	615,204,997
1964.....	175,441,589	450,186,921	11,525,476	23,261,946	586,296	438,549	274,626,385	674,376,728
1965 <sup>a</sup> .....	185,506,941	474,341,248	13,511,000	27,207,101	632,000	472,736	293,571,941	718,248,241

26.—Natural Gas Produced, by Province, and Total Value, 1956-65

NOTE.—Figures from 1920 are given in the corresponding table of previous Year Books beginning with the 1940 edition.

Year	New Brunswick	Ontario	Saskatchewan	Alberta	British Columbia	Northwest Territories	Canada	
							Quantity	Value
	Mcf.	Mcf.	Mcf.	Mcf.	Mcf.	Mcf.	Mcf.	\$
1956....	190,322	12,811,618	9,807,697	146,133,893	187,846	21,210	169,152,586	16,849,556
1957....	176,417	14,400,913	13,994,347	183,140,820	8,274,942	19,243	220,006,682	20,962,501
1958....	123,957	16,147,986	18,819,795	239,049,591	63,638,297	24,100	337,803,726	32,057,536
1959....	117,502	16,839,236	33,612,966	297,568,926	69,128,708	67,189	417,334,527	39,609,393
1960....	98,701	16,987,056	36,571,633	383,682,986	85,592,166	39,785	522,972,327	52,196,882
1961....	96,318	14,544,165	37,192,595	500,843,900	103,018,988	41,678	655,737,644	68,421,918
1962....	95,750	15,648,294	38,845,732	770,963,122	121,093,122	56,707	946,702,727	108,641,159
1963....	103,524	15,920,055	39,936,193	943,354,973	118,058,994	51,478	1,117,425,217	150,468,714
1964....	105,055	13,815,967	62,281,321	1,184,754,869	146,105,999	34,297	1,407,097,508	172,966,859
1965 <sup>a</sup> ....	100,380	13,369,000	41,565,000	1,253,029,000	161,976,000	44,075	1,470,083,455	197,296,911

**Alberta.**—The highlight of 1965 in Alberta was the discovery in February of oil and gas near Rainbow Lake in northwestern Alberta by Banff Oil Ltd., Acquitaine Company of Canada Ltd., and Socony Mobil Oil of Canada Ltd. The productive zones are comparatively thick and porous and have excellent producing characteristics. The main reservoir is the Middle Devonian, Keg River reef having thicknesses up to 600 feet. The discovery initiated a rush to acquire land and commence work but the isolated location, some 400 miles north of Edmonton, and muskeg conditions hampered initial operations. Nevertheless, the Rainbow Lake discovery materially helped to make 1965 a record year for exploratory drilling in Western Canada. The Keg River formation and the overlying muskeg formation extend from northwestern Alberta and adjacent areas in British Columbia and the Northwest Territories southeastward into Saskatchewan and Manitoba, thus indicating large areas for future exploration.

Of the 10,200,000 feet drilled in Alberta in 1965, 4,500,000 feet was exploratory drilling. This was 566,000 feet more than in 1964 but development drilling declined by 700,000 feet. The number of exploratory wells totalled 873 in 1965 against 718 in 1964 and the number of development wells was 1,083 compared with 1,122 in 1964.

Recent drilling in or near the Alberta Foothills has been noteworthy for the discoveries of wet natural gas. A large Devonian gas reservoir at Gold Creek, 25 miles southeast of Grande Prairie is an important example. There the gas tested 150 bbl. per Mcf. and the field has "pay" sections greater than 200 feet. In the Obed region, 35 miles west of Edson, additional Devonian gas was discovered which has a sulphur content of 25 p.c., making the gas as valuable for sulphur as for pipeline gas.

Construction progressed favourably at the plant of Great Canadian Oil Sands Limited, 20 miles north of Fort McMurray. The schedule calls for the commencement of commercial production of oil from the Athabasca bituminous sands in the latter part of 1967. This project, to cost an estimated \$230,000,000 including a pipeline from Edmonton to the site, will produce some 45,000 bbl. daily of crude, tailored to meet refinery requirements.

**Saskatchewan.**—Despite a lack of major discoveries of either oil or gas, the number of wells drilled in the province continued to increase. Indeed, the 1,284 wells drilled in 1965 was a record but footage drilled, a total of 4,500,000 feet, was considerably less than the 5,300,000-foot record established in 1957. The lack of large discoveries was reflected in a decline in exploratory work; the number of exploratory wells decreased from 478 in 1964 to 438 in 1965 and footage drilled showed a corresponding trend from 1,660,000 feet to 1,620,000 feet. There were, however, several small oil discoveries; of the total 1,284 wells drilled, 697 were oil wells, 57 were gas wells, 11 were service wells and 519 were dry and abandoned.

**British Columbia.**—In 1965, oil discoveries about 60 miles north of Fort St. John reversed the previously declining trend of exploration in British Columbia and drilling for natural gas in the Fort Wilson area added to the upsurge in activity created by these oil discoveries. Drilling increased to 1,080,000 feet involving 249 wells from 663,000 feet and 140 wells in 1964; exploration wells increased from 53 to 103 and development well completions from 87 to 146. The most significant oil discovery was in the Weasel River area which extended by several miles the oil trend indicated by the 1964 Nancy discovery and a new gas discovery 70 miles southwest of Fort St. John indicated an entirely new area for production. Of the 249 wells drilled in the province, 113 were oil wells, 41 were gas wells, two were service wells and 93 were abandoned.

**Manitoba.**—The revival in activity that occurred in 1963 and continued in 1964 came to an end in 1965. Drilling declined from 107 wells in 1964 to 64 in 1965 and footage from 247,000 feet to 165,000 feet. However, the fact that Manitoba has the same formations as those in which the Rainbow Lake discoveries were made in Alberta may encourage a return of activity. In 1965, 26 oil wells were completed and the remaining 38 wells were dry.

**Yukon and Northwest Territories.**—Drilling continued in 1965 at about the same rate as in the previous year but no important discoveries were made. Eighteen wells were drilled, one of which encountered oil; two found gas but were not of commercial consequence.

**Eastern Canada.**—In Ontario a sharp decrease in both exploratory and development work resulted in fewer wells and less footage drilled. No discoveries of importance were made. The 204 wells completed included 23 oil wells, 68 gas wells, 16 service wells and 97 dry holes. Exploration continued in Hudson Bay and the lowlands on its southern shore. In Quebec, two exploratory dry holes of about 6,000 feet each were drilled although minor gas was reported. One dry hole, 2,941 feet in depth, was drilled in New Brunswick.

Intensive exploration was carried out in the East Coast offshore area and land holdings were nearly doubled to 114,000,000 acres. There were 24 core-hole tests completed offshore and five core-holes on Sable Island. On the west coast of Newfoundland two dry holes aggregating 4,900 feet were drilled on the Port au Port peninsula.

**Petroleum Refining and Marketing.**—Over 30,000 bbl. of daily crude oil refining capacity was added to established refineries in 1965 bringing the total to 1,083,150 bbl. Canada now has the eighth largest industry in the world in terms of crude treating capacity. Moreover, it is unquestionably one of the most advanced in terms of down-stream refinery units such as catalytic cracking and catalytic reforming.

#### 27.—Crude Oil Refining Capacity, by Region, as at Jan. 1, 1946, 1956 and 1966

Region	1946		1956		1966	
	bbl./day	p.c.	bbl./day	p.c.	bbl./day	p.c.
Atlantic Provinces.....	34,300	13.9	42,300	6.1	125,500	11.6
Quebec.....	71,000	28.9	247,000	35.3	328,700	30.3
Ontario.....	77,950	31.7	159,700	22.8	322,400	29.8
Prairie Provinces and Northwest Territories.....	40,815	16.6	180,800	25.8	206,150	19.0
British Columbia.....	21,800	8.9	70,250	10.0	100,400	9.3
<b>Canada.....</b>	<b>245,865</b>	<b>100.0</b>	<b>700,050</b>	<b>100.0</b>	<b>1,083,150</b>	<b>100.0</b>

In 1965, Canadian refineries received a daily average of 967,000 bbl. of crude oil with domestic oil accounting for 59 p.c. of total receipts. Imported crude, on an average daily basis, amounted to 395,000 bbl. with 236,000 coming from Venezuela, 63,000 from Saudi Arabia, 60,000 from Iran and Iraq combined, 22,000 from Kuwait, 11,000 from Trinidad and 3,000 from Qatar. Imports of refined products increased considerably over 1964 to an average of 165,000 bbl. daily, a gain of 45,000 bbl. daily. Light and heavy fuel oil and diesel oil comprised the major categories of imports.



Domestic demand in 1965 was made up of 1,063,000 bbl. daily of sales to consumers and 80,000 bbl. daily used in the petroleum industry, a total of 1,143,000 bbl. daily compared with the 1964 level of 1,069,000 bbl. Exports of crude, all to the United States, averaged 295,000 bbl. daily and product exports, consisting largely of natural gas liquids such as propane and butane, amounted to 28,000 bbl. daily.

**28.—Domestic and Foreign Crude Oil Received at Canadian Refineries, by Region, 1955, 1960 and 1965**

Region	1955		1960		1965	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
	bbl./day	bbl./day	bbl./day	bbl./day	bbl./day	bbl./day
Atlantic Provinces and Quebec.....	—	210,423	—	337,494	12	392,734
Ontario.....	106,446	27,275	197,555	10,004	299,607	1,789
Prairie Provinces and Northwest Territories.....	133,961	—	145,499	—	191,143	—
British Columbia.....	47,431	—	65,917	—	81,399	—
<b>Canada.....</b>	<b>287,838</b>	<b>237,698</b>	<b>408,971</b>	<b>347,498</b>	<b>572,161</b>	<b>394,523</b>

**Natural Gas Processing and Marketing.**—Natural gas consumers and gas pipeline companies require gas that contains relatively little non-flammable content and is free of noxious components. Since a large proportion of gas produced in Canada does not meet market specifications, there is a major gas processing industry located mainly in Alberta which extracts ingredients that, in themselves, are valuable. These by-products include the natural gas liquids such as propane, butane and pentanes plus and elemental sulphur. At the end of 1965 there were 103 gas plants operating in Canada—91 in Alberta, four in British Columbia, six in Saskatchewan and two in Ontario. The addition in 1965 of 700,000 Mcf. daily of raw gas treating capacity raised the total to 6,100,000 Mcf. daily. Although nine plants were added, only two were of large size—the Westcoast Transmission Company Limited's plant for the Clarke Lake field near Fort Nelson in British Columbia having a raw gas capacity of 200,000 Mcf. daily, and the Edson plant of Hudson's Bay Oil and Gas Company Limited having a capacity of 309,000 Mcf. daily.

Of the 1,320,000,000 Mcf. of Canadian gas plus imports of 16,000,000 Mcf. available for consumption in 1965, 404,000,000 Mcf. went to the United States, 568,000,000 Mcf. was sold to residential, commercial and industrial consumers in Canada, and the remainder was used by the industry in pipeline, field or plant use. In total, 722,000,000 Mcf. of gas was consumed in Canada compared with 633,000,000 Mcf. in 1964. Net additions to storage in 1965 amounted to 210,000,000 Mcf. compared with 190,000,000 Mcf. in 1964.

Table 29 shows sales of natural gas in Canada as well as the number of customers. During 1965, natural gas supplied roughly 17 p.c. of Canada's energy requirements.

**29.—Sales of Natural Gas in Canada, by Province 1965, with Totals for 1961-65**

Province	Sales		Value per Mcf.	Customers Dec. 31
	Quantity	Value		
	Mcf.	\$	\$	No.
New Brunswick.....	60,000	189,000	3.15	2,187
Quebec.....	31,244,000	31,240,000	0.99	218,737
Ontario.....	219,198,000	189,096,000	0.86	690,836
Manitoba.....	33,164,000	22,644,000	0.68	95,084
Saskatchewan.....	56,169,000	25,545,000	0.45	114,997
Alberta.....	189,996,000	53,997,000	0.32	260,573
British Columbia.....	58,113,000	43,832,000	0.75	187,124
<b>Canada, 1965.....</b>	<b>567,944,000</b>	<b>366,543,000</b>	<b>0.65</b>	<b>1,569,538</b>
<b>1964.....</b>	<b>504,503,388</b>	<b>327,982,720</b>	<b>0.65</b>	<b>1,459,619</b>
<b>1963.....</b>	<b>451,598,298</b>	<b>287,584,177</b>	<b>0.64</b>	<b>1,397,138</b>
<b>1962.....</b>	<b>412,061,509</b>	<b>257,589,445</b>	<b>0.62</b>	<b>1,308,085</b>
<b>1961.....</b>	<b>370,739,542</b>	<b>226,678,494</b>	<b>0.61</b>	<b>1,227,658</b>

**Subsection 4.—Coal\***

Production from Canadian coal mines in 1965 was 2.4 p.c. higher than in 1964; increased production of subbituminous and lignite coals more than compensated for a lower output of bituminous coal. Compared with 1956, production in 1965 declined about 3,300,000 tons, consumption about 9,500,000 tons and imports about 5,600,000 tons. Exports, on the other hand, showed a fairly steady increase over the decade, from 600,000 tons in 1956 to 1,200,000 tons in 1965. This increase, however, was attributable only to higher exports of western bituminous coking coal, mainly to Japan. The weak competitive position of Canadian coals is caused by several factors but mainly by high production costs due to low productivity in comparison with coal mines in the United States, and by high costs of moving coal long distances, particularly bituminous coal from mines in Nova Scotia and New Brunswick to the industrial centres of Ontario and Quebec. Mechanization of production, underground and surface coal preparation, particularly of slack and fine sizes, and efforts to control quality through coal sampling and analysis have all been increased to enable the industry to supply higher quality products at reduced costs. On the basis of costs per ton in Western Canada, significant improvement was noted but in Eastern Canada costs continued to increase in 1965.

Assistance to the coal industry was continued by the federal and provincial governments through research programs. The problem of fine coal production received particular attention, with research directed toward improved methods of mining, beneficiation and combustion. Technical assistance was also rendered in the field of quality control through sampling and analysis and through studies of the coking properties of coals in relation to their preparation for export markets and their use in prospective steel industries. Financially, the Federal Government continued assistance to the coal industry through payments administered by the Dominion Coal Board with aid in the acquisition of new equipment and subventions on coal transportation (see pp. 583-585).

**Production and Consumption.**—Coal produced in Canada in 1965 amounted to 11,589,000 tons with an average value of \$6.55 a ton. The number of man-days employed by the industry was 2,261,185, compared with 2,230,376 in 1964. In Nova Scotia, which is the major producing province and the one whose economy is most affected by changing coal markets, there was an increase in coal-mine employment of 2.6 p.c. to 1,565,693 man-days; increases were also shown in Alberta, Saskatchewan and the Yukon, amounting to 1.3 p.c., 6.4 p.c., and 2.5 p.c., respectively. In New Brunswick employment decreased 1.1 p.c. and in British Columbia 9.9 p.c.

Of the coal produced, 60.1 p.c. was bituminous with an average value of \$9.44 a ton at the mine, 22.0 p.c. was subbituminous with a value of \$2.52 a ton, and 17.8 p.c. was lignite with a value of \$1.80 a ton. The proportion of the output won by stripping methods was 47.9 p.c. The output per man-day of coal from strip mines was 30.40 tons and that from underground mines 3.45 tons representing a decrease from 1964 of 1.67 tons for the former and 0.28 tons for the latter. The over-all output per man-day was 16.36 tons compared with 15.89 tons in 1964.

Coal consumption in Canada was about 26,775,000 tons in 1965, somewhat higher than the 25,100,000 tons consumed in 1964. About 62 p.c. was imported, of which over 96 p.c. was bituminous coal used mainly in Ontario and Quebec; imports were 10.7 p.c. higher than in 1964. The production of coke used about 5,900,000 tons of coal, over 90 p.c. of which was imported. Sales of coal to the commercial and household heating markets amounted to about 2,100,000 tons, and the amount used by industrial consumers including thermal-electric power plants, was about 15,500,000 tons, an increase of 15.1 p.c. over 1964. There were 1,200,000 tons of Canadian coal exported in 1965, most of it from mines in Western Canada going to Japan and the United States for blending in the manufacture of metallurgical coke. About 4,800 tons went to the Island of St. Pierre

\* This Subsection contains final 1965 figures for coal which do not quite agree with the preliminary figures given in the introductory write-up to Section 1.

from Nova Scotia and about 30,000 tons from New Brunswick to the eastern United States. The manufacture of briquettes amounted to 68,416 tons in 1965, compared with 59,913 tons in 1964.

### 30.—Coal Production, by Province, and Total Value, 1956-65

NOTE.—Figures from 1874 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Nova Scotia	New Brunswick	Saskatchewan	Alberta	British Columbia	Yukon Territory	Canada	
							Quantity	Value
	tons	tons	tons	tons	tons	tons	tons	\$
1956.....	5,775,025	988,266	2,341,641	4,328,787	1,472,519	9,372	14,915,610	95,349,763
1957.....	5,685,770	976,597	2,248,812	3,156,546	1,113,699	7,731	13,189,155	90,220,670
1958.....	5,269,879	790,719	2,253,176	2,519,901	849,091	4,344	11,687,110	79,963,327
1959.....	4,391,829	1,003,387	1,947,380	2,528,755	751,492	3,879	10,626,722	73,875,895
1960.....	4,570,240	1,028,064	2,170,797	2,391,699	843,868	6,470	11,011,138	74,676,240
1961.....	4,300,758	887,903	2,208,851	2,027,826	964,663	7,703	10,397,704	70,052,683
1962.....	4,204,779	815,529	2,256,306	2,087,310	913,196	7,649	10,284,769	69,160,213
1963.....	4,554,944	886,336	1,873,556	2,289,943	962,684	8,231	10,575,694	71,756,581
1964.....	4,293,130	1,003,362	1,994,039	2,971,133	1,050,430	7,229	11,319,323	72,735,085
1965.....	4,134,161	996,328	2,063,933	3,413,928	971,465	8,801	11,588,616	75,901,126

The amounts and percentages of domestic and imported coal apparently consumed in Canada in the years 1956-65 are shown in Table 31 and imports by type as well as total exports in Table 32. The imports represent amounts taken out of bond for consumption during the respective years, regardless of when received. Thus, the totals are exclusive of coal landed at Canadian ports and re-exported or ex-warehoused for ships' stores without being taken out of bond.

### 31.—Consumption of Canadian and Imported Coal in Canada, 1956-65

NOTE.—Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 1921 edition.

Year	Canadian Coal <sup>1</sup>		Imported Coal 'Entered for Consumption' <sup>2</sup>				Grand Total	Consumption per Capita
			From United States	From Britain	Total <sup>3</sup>			
	tons	p.c.	tons	tons	tons	p.c.	tons	tons
1956.....	14,115,095	38.9	22,045,485	153,404	22,198,049	61.1	36,313,144	2.26
1957.....	12,478,626	39.6	18,910,544	134,671	19,041,030	60.4	31,519,656	1.90
1958.....	11,054,757	43.9	14,089,557	65,275	14,154,121	56.1	25,208,878	1.48
1959.....	10,589,263	43.1	13,861,676	96,814	13,958,996	56.9	24,548,259	1.41
1960.....	9,973,308	42.9	13,211,493	65,375	13,276,599	57.1	23,249,907	1.31
1961.....	9,572,805	44.3	12,253,272	53,226	12,057,086	55.7	21,629,891	1.19
1962.....	9,510,293	43.4	12,583,618	30,571	12,377,965	56.6	21,888,258	1.18
1963.....	9,504,903	42.0	13,348,913	21,101	13,105,686	58.0	22,610,589	1.20
1964.....	10,080,243	40.0	14,983,536	5,578	14,987,656	59.8	25,037,899	1.29
1965.....	10,181,171	38.0	16,590,348	5,045	16,593,547	62.0	26,774,718	1.35

<sup>1</sup> The sum of Canadian coal mines' sales, colliery consumption, coal supplied to employees and coal used in making coke, etc., less the tonnage of coal exported. <sup>2</sup> Imports of briquettes are not included in this table but are shown separately in Table 32. <sup>3</sup> Deductions have been made from this column to take account of foreign coal re-exported from Canada; bituminous coal ex-warehoused for ships' stores was deducted for the years prior to 1964.



### 32.—Imports of Anthracite, Bituminous and Lignite Coal and Briquettes, and Exports of Domestic Coal, 1956-65

NOTE.—Figures from 1868 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Imports of Coal and Briquettes						Exports of Domestic Coal	
	Anthracite	Bituminous <sup>1</sup>	Lignite	Briquettes <sup>2</sup>	Totals		tons	\$
	tons	tons	tons	tons	tons	\$	tons	\$
1956.....	2,545,627 <sup>3</sup>	20,065,807	1,940	126,724	22,740,098	130,318,369	594,166	4,710,030
1957.....	1,925,498 <sup>3</sup>	17,548,585	2,166	73,306	19,549,555	118,581,708	396,311	3,357,959
1958.....	1,556,018 <sup>3</sup>	12,934,262	1,035	41,820	14,533,135	88,552,326	338,544	2,907,513
1959.....	1,603,909	12,621,429	10,780 <sup>4</sup>	24,521	14,260,639	84,808,838	473,768	3,582,313
1960.....	1,297,467	12,250,832	16,537 <sup>4</sup>	15,528	13,580,364	77,174,112	852,921	6,789,163
1961.....	1,058,157	11,237,629	10,712 <sup>4</sup>	9,664	12,316,162	71,717,030	939,360	8,541,679
1962.....	914,336	11,687,898	11,955 <sup>4</sup>	7,608	12,621,797	74,307,252	901,560	8,590,693
1963.....	847,326	12,513,423	9,657 <sup>4</sup>	6,445	13,376,851	78,837,274	1,056,788	9,916,398
1964.....	653,838 <sup>3</sup>	14,333,991	1,285	7,140	14,995,254	86,472,326	1,283,612	11,936,285
1965.....	640,161 <sup>3</sup>	15,954,002	1,230	7,934	16,603,327	126,200,054	1,232,414	12,782,848

<sup>1</sup> Includes coal ex-warehoused for ships' stores.

<sup>2</sup> Coal or coke.

<sup>3</sup> Includes anthracite dust.

<sup>4</sup> Includes coal dust, ground coal and coal *n.o.p.*

**Provincial Activities in the Industry.**—Coal is produced in five provinces and a large share of the market for the industry is concentrated in Central Canada where there is no coal production. A small amount of coal is also mined in the Yukon Territory.

*Nova Scotia's* 1965 coal production of 4,134,161 tons, which accounted for 35.7 p.c. of the total Canadian output, was 3.7 p.c. lower than in 1964. The output is mainly high volatile bituminous coking coal mined in the Sydney, Cumberland and Pictou areas, although some non-coking bituminous coal is mined in the St. Rose, Inverness and Port Hood areas of Cape Breton Island. The average value at the mines was \$11.00 a ton and the output per man-day was about 2.64 tons. All production comes from underground mines, which are mostly mechanized. About 56 p.c. of the production was shipped to other provinces, mainly Central Canada, to be used for industrial purposes; the remainder was used locally for steam-raising, power generation, household and commercial heating and the manufacture of metallurgical coke.

*New Brunswick's* production, of which more than 85 p.c. is strip-mined, is entirely high volatile bituminous coal mainly from the Minto area with a small amount from strip mines in the Chipman and Coal Creek areas. The 1965 production of 996,328 tons was 8.6 p.c. of Canada's output. Average output per man-day from strip mines was 5.62 tons and from underground mines 1.88 tons. The coal had an average value at the mines of \$8.67 a ton. A large part of the production is used locally for heating, power generation and processing; in 1965 about 5.3 p.c. was shipped to Central Canada and about 3.1 p.c. to the United States.

*Saskatchewan's* coal production is entirely lignite, mined by stripping in the Bienfait and Estevan areas in the Souris Valley; this is the only active lignite coal-field in Canada. Production in 1965 was 3.5 p.c. higher than in the previous year, amounting to 2,063,935 tons and representing 17.8 p.c. of the Canadian production. The average output per man-day was 43.784 tons and the average value at the mine was \$1.80 a ton. This is the cheapest source of coal in Canada. The Estevan area serves the provincially owned Boundary Dam thermal-power generating station which uses a large portion of the total lignite production. Almost 39 p.c. of the output was shipped to Manitoba and Ontario for industrial, commercial and household use; the remainder was used within the province for similar purposes. About 31,560 tons of briquettes were produced from lignite, an increase of 45.6 p.c. over the 1964 output.

*Alberta's* production of coal increased 14.9 p.c. in 1965 to 3,413,928 tons and was 29.5 p.c. of Canada's total. Several types are available in the province, ranging from

semi-anthracite mined in the Cascade area to subbituminous. Coking bituminous coals are present in the Inner Foothills Belt but, because of market conditions, they are mined mainly in the Cascade and Crowsnest areas and a large part of the production is exported to Japan for use in metallurgical industries. In several areas of the foothills, lower rank bituminous non-coking coals are available but production in 1965 was confined to the Lethbridge and Coalspur areas and was very small. The other coal areas produce subbituminous coals which made up almost 75 p.c. of the province's output in 1965 and are used mainly for household and commercial heating and thermal power generation; increasing quantities are being used for the latter purpose. The largest producing areas for subbituminous coals are Castor, Drumheller, Pembina, Sheerness and Taber; in 1965 mines in these areas produced more than 88 p.c. of the Canadian subbituminous coal output of 2,554,752 tons, an amount more than 21 p.c. higher than in the previous year. The output of bituminous coal decreased slightly to 859,176 tons. Of the total output in Alberta, 71 p.c. was won by stripping, the average output per man-day being 27.482 tons compared with 4.870 tons for underground mines. The average value of bituminous coal was \$6.72 a ton at the mine, and that of subbituminous coal \$2.52 a ton. Of the provincial production, 0.9 p.c. was shipped to Ontario, 3.8 p.c. (mainly subbituminous) to Manitoba, 11.4 p.c. to Saskatchewan and 8.1 p.c. to British Columbia. The output of briquettes, which are made from the semi-anthracite and low volatile bituminous coals of the Cascade area, was about 37,000 tons.

More than 93 p.c. of *British Columbia's* coal output in 1965 came from the Crowsnest area (East Kootenay district) and most of the remainder came from Vancouver Island, with a small output from mines in the northern mainland. The coals range from high volatile to low volatile bituminous coking coals and over 79 p.c. came from underground mines. Production decreased to about 971,465 tons, representing 8.5 p.c. of the country's output. The average value was \$5.97 a ton at the mine and the average output per man-day was 33.487 tons for strip mines and 6.284 tons for underground mines. Of the total production, 12.5 p.c. was shipped to Manitoba, 3 p.c. to Ontario and small quantities to Alberta and Saskatchewan. More than 400,000 tons of bituminous coking coal from the Crowsnest area were exported, some to the United States but most of it to Japan.

In the *Yukon Territory*, about 8,800 tons of coal were mined from a single underground mine with an average output per man-day of 3.696 tons. This coal was valued at \$9.73 a ton and was all used locally.

## Section 2.—Government Aid to the Mineral Industry

### Subsection 1.—Federal Government Aid

Federal assistance to the mining industry takes the form of the provision of detailed geological, topographical, geodetic, geographical and marine data which are of basic importance to the discovery and development of the mineral resources of Canada; the provision, through laboratory and pilot-plant research, of technical information concerning the processing of ores, industrial minerals and fuels on a commercial scale; financial and technical assistance to the gold mining industry under the Emergency Gold Mining Assistance Act, and certain tax incentives (see Chapter XXIII, Section 2 on Taxation in Canada).

**The Department of Energy, Mines and Resources.**—The federal Department of Energy, Mines and Resources came into being on Oct. 1, 1966. It embraces all of the functions of the former Department of Mines and Technical Surveys, some of the functions of the former Department of Northern Affairs and National Resources, and certain new functions not previously exercised by the Federal Government. The new Department is made up of four Groups—Research, Mineral Development, Water Management, and Energy Development—each headed by an assistant deputy minister and each aiding the Canadian mineral industry in some way.

*The Research Group.*—This Group contains most of the units of the old Department of Mines and Technical Surveys—the Mines Branch, the Geological Survey of Canada, the Surveys and Mapping Branch, the Observatories Branch and the Geographical Branch.

The *Mines Branch* is a large laboratory and pilot-plant complex carrying out applied and basic research to discover new and better methods of ensuring mine safety, extracting and refining ores and other minerals, and using metals and minerals in industry and defence. Gratifying results have been achieved in the extraction of metals from ores and in the refining of low-grade crude oil, in the automation of grinding circuits and cyanide-leaching processes in gold mills and in the leaching of ground or crushed uranium ores by bacteria. In pyrometallurgy—the extraction of metals by heat—applied research is concentrated principally on the combination of shaft and electric furnaces for smelting iron ore. In petroleum refining, research concerns hydrogenation, catalytic cracking, and catalyst development. This work is highly significant because of the opening-up of unconventional sources such as the Athabasca tar sands and the co-called Colorado oil shales, whose economic importance had been recognized by the Mines Branch for many years. A close tie-in with producers is maintained in mineral processing in which the emphasis is on the concentration of metallic ores and on the processing and improvement of industrial minerals. In the field of mineral sciences, the physical, chemical, crystallographic and magnetic studies being undertaken on sulphide minerals are of fundamental interest. In physical metallurgy, experiments on new alloy combinations continue to yield valuable practical benefits for Canadian industry.

The *Geological Survey of Canada* sends about 100 parties into the field each year to collect scientific information and to make observations on the distribution, structure, metamorphism, palaeontology, physical properties and economic deposits of the nation's rocks and surficial deposits. The Survey does not follow up promising mineral or metal occurrences with detailed exploration; this is left to the multitude of private development and mining companies. Its job is to provide geological maps and basic information by which prospectors, exploration companies and others can chart their course (see also pp. 32-33).

Stratigraphic and structural studies are being carried out in most provinces; recently they have included Operation Selwyn in the Yukon, which so far has examined 20,000 sq. miles of the northern Cordillera, and Operation Bow-Athabasca in the southern Rockies. Both these were helicopter-supported projects. Stratigraphic studies continue in various parts of the Arctic islands, and field investigation of the bituminous rocks of Melville Island has been supplemented by sulphur-isotope studies on hydrocarbons. These rocks contain the first known bituminous deposits in the Arctic, where the oil industry has carried out considerable exploratory work in the past few years. As a guide to possible future oil exploration, geophysical studies have been made on the eastern continental margin. An aeromagnetic survey of the Labrador Continental Shelf and a seismic investigation of the Gulf of St. Lawrence will provide information on the thickness of the sedimentary rocks, and some information can be expected on the nature of possible sedimentary basins. Other recent geophysical work included seismic investigations of the western Rocky Mountains and of bedrock configuration beneath overburden in British Columbia and Saskatchewan and in the uranium-producing area of Elliot Lake in Ontario. Aeromagnetic surveys in co-operation with provincial governments have continued, mostly by contract. Field geochemical and biogeochemical techniques, in which mineral deposits are traced through the analysis of minute quantities of minerals in rivers, the soil, and vegetation, continue to be used and developed by the Geological Survey. Two projects using these methods were recently completed in the Bathurst-Jacquet River area of New Brunswick, and around Cobalt, Ont.

A great deal of fundamental geophysical work of interest to prospectors is being carried out by several divisions of the *Observatories Branch*. Its airborne geomagnetic surveys which have ranged all over Canada and across the Atlantic to Scandinavia, have become famous. There is also a permanent network of geomagnetic observatories, supplemented by temporary stations, of which about 25 are occupied in a field season, to determine secular



geomagnetic change. The Observatories gravity research contributes about 8,000 observations annually to its regional mapping program. Over 20 permanent first-order stations are being operated in seismic research, and a large-scale crustal refraction survey with nine recording parties was recently completed in and around Yellowknife, N.W.T. Research continues into the seismicity of Canada, surface wave dispersion, earthquake mechanisms, and equilibrium heat flow.

No mineral development is possible without accurate, large-scale topographical maps, and progress in this field by the *Surveys and Mapping Branch* continues to be gratifying. The functions and current operations of this Branch are described briefly in Chapter I, pp. 32-33.

The *Geographical Branch* studies the natural landscape of Canada and man's impact on it. Mining companies wishing to locate in the Arctic may profit from the Branch's studies of Arctic landforms, the effects of permafrost, and other environmental features.

The Branches of the Research Group also pool their functions in the Polar Continental Shelf Project, a continuing scientific study of the Queen Elizabeth Islands and the surrounding seas, which has already yielded a great deal of geophysical information.

*The Mineral Development Group.*—This Group conducts broad economic and mineral-commodity studies and gathers comprehensive domestic and world data on all minerals, including energy minerals, for the use of government and private industry. It also licenses and leases mineral exploration in offshore areas south of the 60th parallel and in Hudson Bay, administers the Emergency Gold Mining Assistance Act (see p. 585) and the Explosives Act, and co-ordinates the Department's foreign-aid work.

Current activities in these fields include regional studies of the Atlantic Provinces' mineral economy, including the Cape Breton coal situation; a digest of the mining laws of Canada; assessment of several mineral projects throughout Canada for which federal support has been requested; participation in international minerals work through such agencies as the United Nations Lead-Zinc Study Group, the Organizations for Economic Co-operation and Development, and the General Agreement on Tariffs and Trade. In collaboration with the External Aid Office, the Group is setting up training courses for mineral scientists, technologists and economists brought to Canada under the various aid programs and is advising on mineral projects undertaken by Canada as an aid to developing countries. Also of considerable value to the mining industry are the Roads to Resources Program and the Development Road Program, described in Chapter XIX, Part III, Section 2.

*The Water Management Group.*—The role of this Group is to advise on federal water policies and to co-ordinate the work of federal agencies in water-resource management and water pollution. The task is essentially twofold: the most efficient and beneficial use of Canada's streams and lakes, and the preservation, or restoration, of their purity. An illustration of the work concerning mining companies is the monitoring of mine waste effluents in eight base-metal mining areas of New Brunswick. This study will be directed from a regional laboratory at Moncton, with the collaboration of the Department of Fisheries, the Province of New Brunswick, and the mining companies. A similar unit and program are being set up at Calgary, Alta. Personnel is also being recruited to conduct basic and applied research in the abatement of mine pollution in general.

*The Energy Development Group.*—This Group, still in the process of formation (December 1966), will examine Canada's total energy situation and requirements. New gas and oil discoveries and the great strides being made in the development of nuclear power make it imperative that policy-making reflect Canada's total energy picture.

**The Dominion Coal Board.\***—The Board was established by the Dominion Coal Board Act (RSC 1952, c. 86) which was proclaimed on Oct. 21, 1947. By this Act the Board was constituted a department of government to advise on all matters relating to

\* Revised under the direction of Hon. J. Watson MacNaught, Chairman of the Dominion Coal Board, Ottawa.

the production, importation, distribution and use of coal in Canada. The Board is also charged with the responsibility of administering, in accordance with regulations of the Governor in Council, any coal subventions or subsidies voted by Parliament.

The Board is empowered to undertake research and investigations with respect to:—

- (1) the systems and methods of mining coal;
- (2) the problems and techniques of marketing and distributing coal;
- (3) the physical and chemical characteristics of coal produced in Canada with a view to developing new uses therefor;
- (4) the position of coal in relation to other forms of fuel or energy available for use in Canada;
- (5) the cost of production and distribution of coal and the accounting methods adopted or used by persons dealing in coal;
- (6) the co-ordination of the activities of government departments relating to coal; and
- (7) such other matters as the Minister may request or as the Board may deem necessary for carrying out any of the provisions or purposes of the Act.

In addition, the Dominion Coal Board Act provides authority in the event of a national fuel emergency to ensure that adequate supplies of fuel are made available to meet Canadian requirements.

The Act authorizes a Board membership of seven, including the chairman. The latter is the Chief Executive Officer, has the status of a Deputy Minister, spends full time on the Board's business, receives a salary and is in charge of a public service staff. The other members, men of long experience and expert knowledge of aspects and regions of the Canadian coal industry, receive *per diem* payments and travelling expenses while attending Board meetings or while otherwise officially engaged on Board business.

In general, the Board and its staff constitute a central agency through which representations on coal matters are made to the Government from any sector of the industry or the public. Conducting a continuous study of developments and problems within the industry, exchanging information with provincial authorities concerned with coal and with national authorities and agencies in other countries and maintaining the most complete files of Canadian coal information in existence, the Board makes recommendations to the Government and reports to Parliament through the Minister of Energy, Mines and Resources. In view of the growing impact of oil and natural gas on the markets for Canadian coal, the Board and its staff have intensified the study of the relation of the competing sources of energy and of possible new outlets for the solid fuel.

Since its inception, the Board has worked toward the co-ordination of the activities relating to coal of various government departments and other agencies. Its own responsibilities in research on the mining and utilization of coal have been carried out mainly by the Fuels and Mining Practice Division, Mines Branch, Department of Energy, Mines and Resources, although, on occasion, the Board has recommended or commissioned specialized types of research to be conducted outside the government service. As a contribution to the co-ordination of coal research and to the dissemination to the industry of technical information resulting from research, the Board initiated the now annual Dominion-Provincial Conferences on Coal. The Dominion Bureau of Statistics collects much of the statistical information required by the Board.

Government purchases of fuel, which constitute an important outlet for coal, claim a part of the time of the Board's staff in an advisory capacity. Advice on fuel matters is also continuously available to all government departments and agencies. A senior official of the Coal Board is chairman of the Interdepartmental Fuel Committee, which advises on the supply, purchase and utilization of fuel for the Department of National Defence, and of the Dominion Fuel Committee, which is organized along similar lines as an advisory body to other government departments.

The subvention assistance on the movement of Canadian coals, which the Board administers, is authorized from year to year by votes of money by Parliament; payments

are in accordance with Regulations established by Order in Council. This assistance, which has been provided in varying degrees for the past 30 years, was designed to further the marketing of Canadian coals by equalizing as far as possible the laid-down costs of Canadian coals with imported coals. During the year ended Mar. 31, 1965, a total of 4,857,453 tons of coal was shipped under subvention and \$21,602,195 was paid in assistance; in 1965-66, the figures were 4,533,309 tons and \$22,363,631, respectively. Costs and conditions of the coal industry being subject to variations, the Board must review from time to time the rates of subvention and the areas where the assistance is required.

As agent to the Minister of Energy, Mines and Resources, the Board receives applications and administers loans under the Coal Production Assistance Act (RSC 1952, c. 173, as amended by SC 1958, c. 36; SC 1959, c. 39; SC 1960-61, c. 20; and SC 1962-63, c. 13). The Board also administers payments under the Canadian Coal Equity Act (RSC 1952, c. 34), which provides a subsidy on Canadian coal used in the manufacture of coke for metallurgical purposes. In the year ended Mar. 31, 1965, payments under this Act totalling \$212,772 were made on 429,843 tons of coal and in the following year payments totalling \$134,611 were made on 271,942 tons.

**Emergency Gold Mining Assistance Act.**—Under this Act, which came into force in 1948 (RSC 1952, c. 95), financial assistance is provided to marginal gold mines to counteract the effects of increasing costs of production and a fixed price for gold. By enabling gold mines to extend their productive life, the subventions help communities dependent on gold mining to adjust gradually to diminishing support.

In 1963 an amendment extended the provisions of the Act for four years to Dec. 31, 1967 and also introduced a restriction which affects lode gold mines coming into production after June 30, 1965; such mines are eligible for assistance only if the mine provides direct economic support to an existing community, that is, if the majority of the persons employed at the mine reside in one or more of the established communities that are specified in a schedule to the Act. The restriction does not apply to lode mines in production before July 1, 1965 nor to placer gold mines.

The amount of assistance payable to an operator is determined by a formula and is based on the average cost of production per ounce and the number of ounces produced; it ranges from zero to \$10.27 per ounce produced. Gold mines having a cost of production of \$26.50 or less per ounce receive no assistance and those having a cost of production of \$45.00 or more per ounce receive the maximum rate of \$10.27 per ounce.

Under the current formula the assistance payable to the operator of a gold mine is computed by adding 25 p.c. to the product of two factors, the "rate of assistance" and the number of "assistance ounces". The number of assistance ounces is two thirds of the total ounces produced and sold to the Royal Canadian Mint by a mine in a calendar year. The rate-of-assistance factor is two thirds of the amount by which the average cost of production exceeds \$26.50. The rate-of-assistance factor is limited to a maximum of \$12.33 which is reached when the average cost of production rises to \$45 per ounce of gold produced. The average cost of production is determined by dividing the total allowable costs by the total number of ounces produced in the form of bullion from the mine in a calendar year. Only those ounces of gold that have been sold to the Royal Canadian Mint are eligible for inclusion in the assistance-ounces factor. The cost of production includes mining, milling, smelting, refining, transportation and administration costs. Allowances are made for depreciation, pre-production costs and expenditures on exploration and development on the mine property in accordance with the Regulations.

The amounts paid to operators of gold mines to Mar. 31, 1966 for the years 1948-65, inclusive, totalled \$216,184,450 on a production of 51,306,777 oz.t. of gold produced and sold in accordance with the requirements of the Act. The assistance payable for gold produced and sold under the Act in the calendar year 1965 is estimated to be \$15,300,000.

The Act is administered by the Department of Energy, Mines and Resources with the aid of the Office of the Comptroller of the Treasury in accounting matters.



### Subsection 2.—Provincial Government Aid\*

**Newfoundland.**—The Newfoundland Government, through the Mines Branch of the Department of Mines, Agriculture and Resources, provides several valuable services to those interested or involved in exploration and mining, including: the conduct of a continuing program of mineral assessment designed to encourage development of the mineral resources of the province; the inspection of exploration work carried out on concession areas and the examination of mining operations; the administration of beaches (control of removal of sand and gravel as a conservation measure) and the collection of data relevant to the control of sand removal; the identification of mineral rock specimens submitted by the public and the examination of corresponding occurrences where such is warranted; the dispensing of technical advice, in so far as possible, to those who seek such service (i.e., in hydrological problems and on the availability of quarryable peat moss to be removed by permit); co-operation with the Geological Survey of Canada and other Federal Government agencies; and the preparation and publication of data useful for educational and general informational purposes, including the preparation of mineral and rock sample sets. Geological reports, geophysical maps and compilations of general data pertaining to specific areas are procurable at nominal cost and other information from unclassified files is made available to interested parties. Prospector's or miner's permits are issued by the Mines Branch and mining claims are recorded.

**Nova Scotia.**—Under the provisions of the Mines Act (RSNS 1954, c. 179), the Government of Nova Scotia may assist a mining company or operator in the sinking of shafts, slopes, deeps and winzes and the driving of adits, tunnels, crosscuts, raises and levels. This assistance may take the form of work performed under contract, the payment of bills for materials and labour, or the guarantee of bank loans. Any such work must be approved by the Department of Mines. Mining machinery and equipment to be used in searching for or testing and mining minerals may be made available through the Government. Such equipment is under the direct supervision of the Chief Mining Engineer.

The Government of Nova Scotia is also empowered to make any regulations considered necessary for increasing the output of coal. Such regulations cover the appropriation, on payment, of unworked coal lands, the operation of coal mines, and loans or guarantees for loans. Close co-operation is maintained with the Federal Government in carrying out federal regulations made to secure increased production and economical distribution of coal from the mines of the province.

**New Brunswick.**—The Mines Branch of the Department of Lands and Mines has five divisions. The *Mineral Lands Division* administers the disposition of Crown mineral rights including the issuing of prospecting licences, recording of mining claims, issuing of mining licences and leases and other matters pertaining thereto. Detailed and index claim maps are prepared for distribution. The *Mine Inspection and Engineering Division* administers the safety regulations governing operations under the Mining Act. All mines are regularly inspected, laboratory facilities are maintained and certain equipment used in mines must be approved by the Division. The *Geological Division* carries on general and detailed geological mapping and investigation. Maps and reports are prepared for distribution, mineral and rock specimens are examined for prospectors and preliminary examinations of mineral prospects are made when requested and circumstances warrant. The *Mine Assessment Division* is responsible for the collection of mining taxes and royalties and the preparation of statistics on mineral production. The *Bathurst Division* serves as recording office for northeastern New Brunswick. In addition, claim maps as well as topographical, geological and aeromagnetic maps are available for perusal and distribution. The staff is prepared to provide information concerning the Mining Act and the use of various types of maps.

\* Compiled from material supplied by the respective provincial governments.

**Quebec.**—The Department of Natural Resources, through its Mineral Resources Branch, administers general mining in the province, under authority of the Mining Act (SQ 1965, c. 34). The Branch comprises four Divisions—Geological Services, Mining Services, Laboratories, and Pilot Plant.

The work of the Geological Services Division is conducted through a Geological Exploration Service, a Mineral Deposits Service, a Mapping Service and a Water, Gas and Petroleum Service. It is responsible for the geological surveying of Quebec territory, with a view to promoting the development of the province's mineral resources. Yearly expeditions in the field provide information upon which detailed reports on various districts and geological maps are prepared for the use of interested persons. A unique mapping index is maintained through which prospectors may quickly obtain accurate information of value to their operations. The Water, Gas and Petroleum Division conducts hydro-geological surveys in quest of subterranean water and supervises drilling and boring operations undertaken by private companies in search of natural gas and oil.

The Mining Services Division includes an Engineering Works Service, a Mining Titles Service, a Mining Exploration Service and a Mines Inspection Service. It issues prospecting and development permits, grants mining lands for working purposes, and collects fees for mining rights. It is responsible for the inspection of mines, quarries and processing plants to ensure that operations are consistent with regulations and to ensure the safety of mine workers. A trained rescue crew of about 375 members operates as three main groups and nine secondary groups. In addition, all workers in active underground mines are trained in rescue operations. The Department undertakes the construction and maintenance of mining roads as authorized under the Mining Act; it has constructed and paid the full cost of certain highways leading to new mining districts. In addition, to avoid the establishment of slums in the vicinity of mining enterprises, the Department regulates the use of the land and authorizes the building of well-organized residential areas.

Laboratories, operated for the use of prospectors, geologists, engineers and mine operators, include equipment for mineralogy, petrography, the dressing of ore, wet and dry assays, spectrography or X-ray photography. Mineral determinations are made free of charge but the assaying of ore content is subject to a fee; free coupons are issued by the Department to be used by prospectors for payment of assays. The laboratories have patented 12 new processes for the extraction and treatment of minerals and, because of the development of such new metallurgical processes, certain minerals once deemed valueless are now of great commercial importance.

To provide for the future development of the mining industry, scholarships are granted to students wishing to follow a career in geology, mining and metallurgical engineering, as well as to students in hydrology or other relevant fields of science (hydro-electricity, hydraulics or meteorology). The Department, in co-operation with universities in Quebec and Montreal, gives yearly courses in prospecting and lectures are given by departmental geologists and engineers at various points in the province.

**Ontario.**—The Ontario Department of Mines renders a multiplicity of services of direct assistance to the mining industry within the province. The *Mining Lands Branch* of the Department handles all matters dealing with the recording of mining claims, assessment work, etc., and the preparation of title to mining lands. As a service to the mining public, individual township maps are prepared and kept up to date showing lands open for staking and recorded and patented claims therein. District Mining Recorders maintain offices at strategic locations throughout the province. The *Geological Branch* carries on a continuing program of geological mapping and investigation and prepares, for the use of the public, detailed reports and maps of the areas studied. A program is under way, in co-operation with the Geological Survey of Canada, through which the whole province is to be flown and mapped in a series of airborne magnetometer surveys. In many active areas of the province, resident geologists gather and make available to the public information concerning geological conditions, exploration and development within their respective districts. A geologist specializing in industrial minerals investigates



methods of treatment and recovery of such minerals and compiles data on the uses, specifications and markets for such products. During the winter months, courses of instruction for prospectors are held in various centres throughout the province.

The work done by the *Laboratory Branch* includes wet analyses and assays of metal and rock constituents on a custom fee basis, as well as mineralogical analyses and physical testing. The same service is given free of charge to holders of valid assay coupons issued for the performance of assessment work on mining claims. The *Temiskaming Testing Laboratories*, situated at Cobalt, operate a bulk sampling plant mainly to assist the producers of the area in marketing their silver-cobalt ores; they also perform fire assays and chemical analyses. The *Inspection Branch* administers the operating rules of the Mining Act which call for the regular examination of all operating mines, quarries, sand and gravel pits and certain metallurgical works with a view to ensuring proper conditions of health and safety to the men employed. District offices to serve the local areas are maintained in the major mining centres of the province. Mine rescue stations in the principal mining sections are operated under the supervision of the Branch and all hoisting ropes in use at mines are periodically tested by a Branch-operated cable-testing laboratory.

Since 1951 the Department has been engaged in a road-building program to give access to mineralized areas and open them for full development. In 1955 this became an interdepartmental project with other interested departments participating through an interdepartmental committee of Ministers which decides on priorities and locations. Actual construction is carried out by the Department of Highways. The federal-provincial Roads to Resources Program was inaugurated in Ontario in 1959; under the terms of agreement, the federal and provincial governments share equally in the cost of constructing roads to otherwise inaccessible areas (see also the Transportation Chapter, Part III, Section 2).

The *Public Relations Office* of the Department carries out a regular publicity and information program and maintains a library of films on mining subjects which are available for free loan to the public. Each year, displays pertaining to mining are prepared and presented at the Canadian National Exhibition and elsewhere in the province.

**Manitoba.**—The Mines Branch of the Manitoba Department of Mines and Natural Resources offers five main services of assistance to the mining industry: maintenance, by the Mining Recorder's offices at Winnipeg and The Pas, of all records essential to the granting and retention of titles to every mineral location in Manitoba; compilation, by the geological staff of the Branch, of historical and current information pertinent to mineral occurrences of interest and expansion of this information by a continuing program of geological mapping; enforcement of mine safety regulations and, by collaboration with industry, introduction of new practices such as those concerned with mine ventilation and the training of mine rescue crews which contribute to the health and welfare of mine workers; and maintenance of a chemical and assay laboratory to assist the prospector and the professional man in the classification of rocks and minerals and the evaluation of mineral occurrences. Manitoba also aids the mining industry by assisting in the construction of access roads to mining districts.

To encourage the exploration for minerals in Manitoba, the Mineral Exploration Assistance Act was passed in April 1966. This Act provides for the payment of grants to individuals to assist in defraying the cost of exploration within designated areas. If assisted exploration results in the discovery of a deposit, the grant is repayable from the profits of the mine; a grant for exploration that proves unsuccessful is not repayable.

**Saskatchewan.**—Assistance to the mining industry in Saskatchewan is administered by the Department of Mineral Resources. The *Mineral Lands Branch* of the Department is responsible for administering the Precambrian Assistance Program. This Program



designed to stimulate development and utilization of the mineralized areas of northern Saskatchewan, offers to industry a 50-p.c. rebate of approved exploration expenditures on a specified area or property to a maximum of \$50,000 a year for each individual or company and a maximum of \$150,000 on any one area or property. This Branch is also responsible for making disposition of all Crown minerals and maintains records respecting areas let out by lease, permit or claim. Recording offices, located at Regina, La Ronge, Uranium City and Creighton, assist the public in determining the lands available and accept applications.

Officers of the *Engineering Branch*, under the authority of the Mines Regulation Act, make regular examinations of all mines to ensure proper conditions for the health and safety of the men employed. Safety education, particularly in the form of first aid and mine rescue instruction, is also a part of the work of this Branch. All Branch officers are stationed at the Regina headquarters.

The Precambrian Geology Division of the *Geological Sciences Branch* conducts geological surveys in the shield areas of the province and publishes maps and reports for the information and guidance of the industry. Resident geologists are maintained at Uranium City and La Ronge and at the latter centre a laboratory provides for the storage and examination of core and samples. The Division processes exploration data and assessment work to be made available for inspection by the industry.

**Alberta.**—Alberta Government assistance to the mining industry is diversified in character. The Mines Division of the Department of Mines and Minerals regulates coal mines and quarries and maintains standards of safety by inspection and certification of workers. The Workmen's Compensation Board also maintains safety standards and trains mine rescue crews. The oil and gas industries are served in a similar way by the Oil and Gas Conservation Board. Its regulatory measures, however, are also concerned with preventing the waste of oil and gas resources and with giving each owner of oil and gas rights the opportunity of obtaining a fair share of production. This Board compiles periodic reports and annual records which are of invaluable assistance in oil development in Alberta. The mining industry is also served by the Research Council of Alberta which has made geological surveys of most of the province and has carried forward projects concerned with the uses and development of minerals. The Council has studied the occurrence, uses and analyses of Alberta coals and their particular chemical and physical properties, the use of coals in the generation of power, and the upgrading and cleaning of coal, and has also studied briquetting, blending, abrasion loss, shatter and crushing strength, asphalt binders and dust-proofing of coal. Studies have been made of glass sands, salt, fertilizers, cement manufacture and brick and tile manufacture. (See also pp. 403-404.)

The province from time to time has had commissions examine various aspects of the mining industry when it has considered that their findings would be of assistance in developing such industries. The province, together with the Canadian Association of Oil Well Drilling Contractors and the Western Canada Petroleum Association, maintains a detailed supervisory and safety training program concerned with the drilling of oil and gas wells. Of assistance also to mining companies and oil companies are the special deductions provided for in the Alberta Income Tax Act. These follow the parallel provisions in the federal Income Tax Act.

**British Columbia.**—The Department of Mines and Petroleum Resources of British Columbia provides the following services: detailed geological mapping as a supplement to the work of the Geological Survey of Canada; free assaying and analytical work for prospectors registered with the Department; assistance to the prospector in the field by departmental engineers and geologists; grub-stakes, limited to a maximum of \$700, for prospectors; assistance in the construction of mining roads and trails; and inspection of mines to ensure safe operating conditions.

### Section 3.—Mining Legislation

**Federal Mining Laws and Regulations.**—As of Jan. 1, 1966, the mineral rights vested in the Crown in right of Canada are those situated in the Yukon Territory and the Northwest Territories, those in the islands in Hudson Bay and under Hudson Bay and Hudson Strait, and those under Canada's continental shelves. There are also some small and usually isolated parcels scattered throughout the provinces. The Department of Energy, Mines and Resources is responsible for the disposition of mineral rights and for the administration and enforcement of regulations relating to minerals in Canada's offshore areas, other than those under Arctic coastal waters, in Hudson Bay, the islands in Hudson Bay, Hudson Strait and the small parcels above mentioned. The Department of Indian Affairs and Northern Development is similarly responsible in the Yukon Territory, the Northwest Territories and the offshore rights under Arctic coastal waters; this Department also acts as adviser to Indian bands in Indian reserves and is responsible for the administration and enforcement of the relevant regulations.

Mineral rights of Indian reserves in the provinces are also vested in the Crown in the right of Canada and are administered by the Indian Affairs Branch of the Department of Indian Affairs and Northern Development. The minerals on an Indian reserve may be developed under the Indian Oil and Gas Regulations or the Indian Mining Regulations for the benefit of the Band of Indians having rights to the reserve, only after the Band has given approval by referendum. Indian Band Councils are encouraged to take a share of responsibility in the management of their mineral resources.

Mining exploration is carried out in the Yukon Territory in accordance with the provisions of the Yukon Quartz Mining Act and the Yukon Placer Mining Act; in the Northwest Territories, including Arctic coastal waters, operations are governed by the Canada Mining Regulations 1961 as amended. There are also the Territorial Dredging Regulations, Territorial Coal Regulations and Territorial Quarrying Regulations common to both territories. In the Yukon Territory, mining rights may be acquired by staking claims under the appropriate Acts or Regulations; 21-year leases may be obtained on claims and such leases are renewable.

Under the Canada Mining Regulations, a prospector's licence is required. Staked claims must be converted to lease or relinquished within ten years. In certain areas, a system of exploration by permit over large areas is allowed. Any individual over 18 years of age or any joint stock company incorporated or licensed to do business in Canada may hold a prospector's licence. No lease will be granted to an individual unless the Minister of the Department involved is satisfied that the applicant is a Canadian citizen and will be the beneficial owner of any interest acquired under such lease; no lease will be granted to a corporation unless the Minister is satisfied that at least 50 p.c. of the issued shares of the corporation are owned by Canadian citizens or that the shares of the corporation are listed on a recognized Canadian stock exchange and that Canadians will have the opportunity of participating in the financing and ownership of the corporation. Any new mine beginning production after the Canada Mining Regulations came into force in 1961 will not be required to pay royalties for a period of 36 months, starting from the day the mine comes into production. Production date is established as the date determined under the provisions of the Income Tax Act.

An exploration assistance fund for petroleum and other minerals in the Yukon and Northwest Territories was established by the Federal Government in 1966. Initially limited to \$3,000,000 per year, the fund may provide 40 p.c. of the cost of approved exploration programs. Assistance is available only to Canadian citizens or companies incorporated in Canada. Named the Northern Mineral Exploration Program, it is designed to encourage investment from additional Canadian sources previously not attracted to investment in northern exploration operations.

**Oil and Gas Legislation.**—The Canada Oil and Gas Land Regulations and the Canada Oil and Gas Drilling and Production Regulations, issued pursuant to the Territorial Lands



Act and the Public Lands Grants Act regulate the disposition of oil and gas rights and regulate exploration and development in the Yukon Territory, the Northwest Territories and the offshore areas of the continental shelves, but not under lands within any provinces. Only subsurface rights and those beneath the seabed are granted. When required, surface rights are separately negotiated. Oil and gas exploratory permits are issued for nine, 10 or 12 years according to locality and oil and gas leases with a tenure of 21 years may be acquired from exploratory permits. Leases, which are renewable if oil or gas is still able to be produced, must conform to prescribed land patterns but must not exceed 50 p.c. of the area of an exploratory permit area. Under certain conditions, a permittee may obtain a lease on the other half of the permit area or part of it by paying enhanced royalty which varies according to the location of the permit area.

An oil and gas exploratory permit may be issued to any individual over 21 years of age or to any joint-stock company incorporated or licensed to do business in Canada, or incorporated in any province of Canada. No oil and gas lease granted to a permittee will be issued to an individual unless the Minister of the Department involved is satisfied that the applicant is a Canadian citizen and will be the beneficial owner of any interest acquired under such lease, or to a corporation unless the Minister is satisfied that at least 50 p.c. of the issued shares of the corporation are beneficially owned by persons who are Canadian citizens or that the shares of the corporation are listed on a recognized Canadian stock exchange, and that Canadians will have an opportunity of participating in the financing and ownership of the corporation.

**Provincial Mining Laws and Regulations.\***—In general, all Crown mineral lands lying within the boundaries of the several provinces (with the exception of those within Indian reserves, National Parks and other lands which are under the jurisdiction of the Federal Government) are administered by the respective provincial governments. The exception is Quebec where all mineral lands except those granted to individuals in the townships prior to 1880 are administered by the province; also mining rights on federal lands in Quebec are administered by the province.

The granting of land in any province except Ontario and Nova Scotia no longer carries with it mining rights upon or under such land. In Ontario mineral rights are expressly reserved if they are not to be included. In Nova Scotia no mineral rights belong to the owner of the land except those pertaining to gypsum, limestone and building materials, and the Governor in Council may declare deposits of either limestone or building materials to be minerals. Such declaration is to be based on economic value or to serve the public interest. In such case, the initial privilege of acquiring the declared minerals lies with the owner of the surface rights who must then conform with the requirements of the Mines Act. In Newfoundland, mineral and quarry rights are expressly reserved. Some early grants in British Columbia, Alberta, Saskatchewan, Manitoba, New Brunswick, Quebec and Newfoundland also included certain mineral rights. Otherwise, mining rights must be separately obtained by lease or grant from the provincial authority administering the mining laws and regulations. Mining activities may be classified as placer, general minerals (or veined minerals and bedded minerals), fuels (coal, petroleum and gas) and quarrying. Provincial mining regulations under these divisions are summarized in the following paragraphs.

**Placer.**—In most provinces in which placer deposits occur there are regulations defining the size of placer holdings, the terms under which they may be acquired and held, and the royalties to be paid.

**General Minerals.**—These minerals are sometimes described as quartz, lode, or minerals in place. With the exception of British Columbia, the most elaborate laws and regulations apply in this division. In all provinces except Alberta and Saskatchewan, a prospector's or miner's licence, valid for one year, must be obtained to search for mineral deposits, the licence being general in some areas but limited in others; a claim of promising ground of a

\* Compiled from material supplied by the provincial governments.



specified size may then be staked. In Manitoba and British Columbia a licence is required only for staking and in British Columbia any number of dispositions may be staked under one licence. A claim must be recorded within a time limit and payment of recording fees made, except in Quebec where no fees are required. Work to a specified value per annum must be performed upon the claim for a period of up to ten years except in Quebec where a development licence may be renewed on a yearly basis; also in Saskatchewan there is no work commitment in the first year of the claim. There is no time limit in British Columbia but \$500 assessment work, of which a survey may represent two fifths, must be performed and recorded before a lease may be obtained. In Quebec, a specified number of man-hours of work must be performed and the excess may be carried forward for renewal of licence. The taxation applied most frequently is a percentage of net profits of producing mines or royalties. In Saskatchewan, subsurface mineral regulations covering non-metallies stipulate the size and type of dispositions that may be made in order to maintain the disposition in good standing, provide for fees, rentals and royalties, and set out generally the rights and obligations of the disposition holder.

*Fuels.*—In provinces where coal occurs, the size of holdings is laid down together with the conditions of work and rental under which they may be held. In Quebec, the search for and development of petroleum and natural gas may be carried out under a prospecting permit or working lease; the former covers a period of five years and an acreage of not over 60,000 acres, and the latter a period of 20 years and an acreage not over half the acreage of the prospecting permit. In Nova Scotia, mining rights to certain minerals, including petroleum, occurring under differing conditions may be held by different licensees. Provision is sometimes made for royalties. Acts or regulations govern methods of production. In the search for petroleum and natural gas, an exploration permit or reservation is usually required; however, in Manitoba, Saskatchewan, Alberta and British Columbia leases usually follow the exploration reservation whether or not any discovery of oil or gas is made. In Manitoba, Saskatchewan and Alberta, exploration costs are applicable in part on the first year's lease rental and in British Columbia on two years' lease rental. In other provinces, the discovery of oil or gas is usually prerequisite to obtaining a lease or grant of a limited area, subject to carrying out drilling obligations and paying a rental, a fee, or a royalty on production.

*Quarrying.*—Regulations under this heading define the size of holdings and the terms of lease or grant. In Nova Scotia, sand deposits of a quality suitable for uses other than building purposes and limestone deposits of metallurgical grade belong to the Crown; gypsum quarries belong to the owner of the property. On Quebec public lands and on those granted to individuals after Jan. 1, 1966, the stone, sand and gravel, like other building materials, belong to the Crown; quarries located on land granted to individuals prior to 1966 remain in the possession of the owners of the surface; the right to exploit all building materials except sand and gravel may be acquired by ordinary staking-out and the right to work sand and gravel beds is set by regulation. In Saskatchewan, sand and gravel on the surface and all sand and gravel obtainable by stripping off the overburden or other surface operation belong to the owner of the surface of the land. In Alberta, sand, gravel, clay and marl recovered by excavating from the surface belong to the owner of the surface of the land.

Copies of mining legislation including regulations and other details may be obtained from the provincial authorities concerned.

## Section 4.—Industrial Statistics of the Mineral Industry

The scope of the annual statistics on mineral production published by the Dominion Bureau of Statistics includes a general review of the principal mineral industries such as the copper-gold, silver-lead-zinc, and nickel-copper industries as well as a section on metallurgical works. Additional data published at irregular intervals include such features as numbers of employees, salaries and wages paid and net value added by processing.

The figures for 'net value added by processing' of industries given in Table 33 are the settlements received for shipments by producers and the additional values obtained when the smelting of ores is completed in Canada, less the cost of materials, fuel, etc. The totals indicate returns to the different industries, or the 'business done' by these industries. These industry series of data are not comparable to the commodity series shown in Table 4, p. 539 where, with respect to copper, lead, zinc and silver, values are computed by applying the average prices for the year in the principal metal markets to the total production from mines and smelters with no reduction for fuel, electricity and other supplies consumed in the production process.

Some imported ores and concentrates are treated in Canadian non-ferrous smelting and refining works, especially in the production of aluminum, where imported ore only is used. The smelting and refining industry is classified as manufacturing and the data relative to that industry are included in the primary metal industry (see Chapter XVI on Manufactures).

### 33.—Principal Statistics of the Mineral Industry, by Province and by Industry, 1963

Province or Territory and Industry	Plants or Estab- lishments	Em- ployees	Salaries and Wages	Cost of Process Supplies, Fuel, Electricity, Freight and Smelter Charges	Net Value Added by Processing
Province	No.	No.	\$	\$	\$
Newfoundland.....	20	4,923	28,407,611	48,580,275	79,599,611
Prince Edward Island.....	3	37	123,106	45,941	296,446
Nova Scotia.....	42	7,195	28,853,678	15,218,356	45,808,128
New Brunswick.....	47	1,498	5,293,936	6,460,104	11,665,758
Quebec.....	467	23,750	119,170,934	121,372,514	326,158,566
Ontario.....	544	31,591	157,397,878	107,580,900	363,843,386
Manitoba.....	77	4,415	23,883,858	7,103,696	36,677,683
Saskatchewan.....	159	2,841	17,720,649	13,602,419	224,331,834
Alberta.....	312	6,071	35,099,282	17,651,247	593,734,872
British Columbia.....	212	6,938	37,273,515	54,845,855	150,768,746
Yukon Territory.....	35	906	5,529,813	3,003,491	10,474,752
Northwest Territories.....	19	847	4,702,754	3,568,229	12,493,081
<b>Canada.....</b>	<b>1,937</b>	<b>91,012</b>	<b>463,457,014</b>	<b>399,033,027</b>	<b>1,855,852,863</b>
Industry					
<b>Metallics.....</b>	<b>519</b>	<b>58,778</b>	<b>312,373,113</b>	<b>307,161,997</b>	<b>746,456,880</b>
Placer gold.....	30	210	1,221,942	251,638	1,950,329
Gold quartz.....	122	15,120	63,095,590	27,643,451	99,259,218
Copper-gold-silver.....	176	11,536	58,514,522	79,680,132	150,193,173
Silver-cobalt.....	21	705	3,003,602	1,364,863	5,591,777
Silver-lead-zinc.....	61	4,636	24,885,947	55,524,972	70,252,882
Nickel-copper.....	26	12,110	68,080,256	26,597,731	95,523,703
Iron.....	48	9,993	65,646,688	90,328,431	215,043,074
Miscellaneous metallics.....	35	4,468	27,924,566	25,770,789	118,642,123
<b>Non-metallics.....</b>	<b>149</b>	<b>11,773</b>	<b>55,767,258</b>	<b>40,433,301</b>	<b>187,133,967</b>
Asbestos.....	17	6,823	35,507,888	23,912,435	118,085,686
Feldspar, quartz and nepheline syenite.....	20	381	1,564,114	1,029,679	5,302,504
Gypsum.....	9	680	2,876,245	2,716,050	7,129,679
Mica.....	9	12	37,660	8,617	36,936
Peat.....	56	1,482	3,952,334	2,703,059	8,337,288
Salt.....	11	955	4,566,868	4,455,611	17,985,528
Talc and soapstone.....	4	79	276,676	173,883	661,792
Miscellaneous non-metallics.....	23	1,361	6,985,473	5,433,967	29,594,554
<b>Fuels.....</b>	<b>731</b>	<b>14,743</b>	<b>72,021,056</b>	<b>38,059,873</b>	<b>844,336,135</b>
Coal.....	97	8,903	35,624,266	16,741,730	54,553,347
Natural gas processing, petroleum and natural gas.....	634	5,840	36,396,790	21,318,143	789,782,788
<b>Structural Materials.....</b>	<b>538</b>	<b>5,718</b>	<b>23,295,587</b>	<b>13,377,856</b>	<b>77,925,881</b>
Sand and gravel.....	331	2,266	9,249,454	3,656,301	38,880,676
Stone.....	207	3,452	14,046,133	9,721,555	39,045,205

### Section 5.—World Production of Certain Metallic Minerals and Fuels

Table 34 shows the production of certain metallic minerals and fuels in the different countries of the world for the year 1964. These figures are taken from the *United Nations Statistical Yearbook 1965* which presents production figures for a much more extensive list of mining and quarrying industries. The 1964 figures are provisional and have been converted from kilograms to ounces troy for gold, from metric tons to ounces troy for silver, and from metric tons to short tons for the other metals and fuels shown.

#### 34.—World Production of Certain Metallic Minerals and Fuels, 1964

NOTE.—Where dashes occur throughout this table they indicate that no figures were given in the *United Nations Statistical Yearbook* either because there was no production or because the quantity was not available.

Country	Gold	Silver	Copper	Iron	Lead	Zinc	Coal	Crude Petroleum
	'000 oz.t.	'000 oz.t.	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
Afghanistan.....	—	—	—	—	—	—	124.6	—
Albania.....	—	—	2.9	—	—	—	—	997.6
Algeria.....	—	—	1.1	1,569.7	10.7	41.2	38.6	28,910.3
Angola.....	—	—	—	622.8	—	—	—	15,817.1
Argentina.....	0.3	1,945.1	—	49.6	28.5	25.2	369.3	208.3
Australia.....	963.8	18,274.5	113.9	4,094.0	419.9	386.0	30,722.5	2,935.5
Austria.....	—	—	1.8	1,243.4	6.5	10.8	113.5	2,712.8
Bahrain.....	—	—	—	—	—	—	—	—
Belgium.....	—	—	—	20.9	—	—	23,484.7	—
Bolivia.....	60.7	4,854.8 <sup>1</sup>	5.2 <sup>1</sup>	—	19.5 <sup>1</sup>	10.8 <sup>1</sup>	—	459.7
Brazil.....	—	—	3.1	11,243.6	—	—	1,854.1	4,798.4
Britain.....	—	—	—	4,937.3	0.2	—	216,862.1 <sup>2</sup>	142.2
Brunei.....	—	—	—	—	—	—	—	3,908.6
Bulgaria.....	—	—	22.5	283.3	111.4	86.3	671.3	176.4
Burma.....	—	1,353.5	0.1	—	20.8	8.9	11.0	615.1
Canada <sup>3</sup> .....	3,835.4	29,902.6	486.9	22,884.3	203.7	684.5	11,319.3	40,850.7
Central African Republic.....	0.1	—	—	—	—	—	—	—
Chile.....	65.6	2,954.7	878.3	7,011.8	1.1	1.0	1,758.2	1,966.5
China—								
Mainland.....	—	—	99.2	—	110.2	110.2	—	—
Taiwan.....	17.7	—	1.9	—	—	—	5,542.4	9.9
Colombia.....	365.0	131.8	—	385.8	—	—	3,306.9	9,431.4
Congo—								
Brazzaville.....	3.5	—	—	—	2.4	5.6	—	92.6
Democratic Republic of (formerly Leopoldville).....	223.3	1,478.9	305.7	—	—	115.4	110.2	—
Cuba.....	—	—	6.6	—	—	—	—	11.0
Cyprus.....	—	—	18.5 <sup>1</sup>	—	—	—	—	—
Czechoslovakia.....	—	—	—	874.1	14.9	—	31,087.4	215.0
Ecuador.....	16.9	115.7	—	—	—	—	—	406.8
Fiji Islands.....	101.6	—	—	—	—	—	—	—
Finland.....	22.1	607.6	38.7	338.4	2.9	86.0	—	—
France.....	—	—	—	21,831.3	13.0	18.8	58,455.6	3,137.2
Gabon.....	42.8	—	—	—	—	—	—	1,166.2
Germany—								
Eastern.....	—	—	25.4	540.1	11.0	11.0	2,579.4	—
Federal Republic of.....	108.8	11,580.7	1.8	3,082.1	53.9	122.6	157,304.2	8,458.0
Ghana.....	864.9	—	—	—	—	—	—	—
Greenland.....	—	—	—	—	—	—	27.6	—
Guatemala.....	—	—	—	—	0.2	—	—	—
Guinea.....	—	—	—	422.2	—	—	—	—
Guyana (formerly British Guiana).....	1.9	—	—	—	—	—	—	—
Haiti.....	—	—	6.6	—	—	—	—	—
Honduras.....	3.2	3,218.3 <sup>1</sup>	—	—	6.0 <sup>1</sup>	6.2 <sup>1</sup>	—	—
Hong Kong.....	—	—	—	71.7	—	—	—	—
Hungary.....	—	—	0.3	207.2	1.3	3.2	4,547.0	1,985.3
India.....	148.0	151.1	11.6	13,684.1	5.1	6.8	68,828.3	2,438.3
Indonesia.....	—	—	—	—	—	—	491.6	25,719.1
West Irian.....	—	—	—	—	—	—	—	97.0

For footnotes, see end of table.



## 34.—World Production of Certain Metallic Minerals and Fuels, 1964—concluded

Country	Gold	Silver	Copper	Iron	Lead	Zinc	Coal	Crude Petroleum
	'000 oz.t.	'000 oz.t.	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
Iran.....	—	—	—	—	16.5	16.5	—	92,600.7
Iraq.....	—	—	—	—	—	—	—	67,931.0
Ireland.....	—	—	—	—	—	—	254.6	—
Israel.....	—	—	10.7	—	—	—	—	219.4
Italy.....	—	1,061.0	1.4	509.3	36.5	120.0	520.3	2,961.9
Japan.....	460.2	15,966.1	117.1	1,578.5	59.6	238.7	56,139.6	724.2
Kenya.....	12.5	—	2.3	—	—	—	—	—
Korea—	—	—	—	—	—	—	—	—
North.....	—	—	11.0	—	55.1	110.2	12,345.9	—
Republic of.....	75.8	405.1	0.6	377.0	3.6	2.8	10,606.4	—
Kuwait.....	—	—	—	—	—	—	—	117,637.5
Liberia.....	1.8	—	—	7,716.2	—	—	—	—
Libya.....	—	—	—	—	—	—	—	45,719.5 <sup>1</sup>
Luxembourg.....	—	—	—	2,080.1	—	—	—	—
Madagascar.....	0.5	—	—	—	—	—	—	—
Malaysia—	—	—	—	—	—	—	—	—
Malaya.....	6.3	—	—	4,055.4	—	—	—	54.0
Sarawak.....	3.1	—	—	—	—	—	—	—
Mexico.....	210.0	41,731.7	57.9	1,534.4	192.7	259.7	1,407.7	18,226.7
Morocco.....	—	604.4	2.0	578.7	83.2	50.5	440.9	132.3
Mozambique.....	—	—	—	—	—	—	270.1	—
Netherlands.....	—	—	—	—	—	—	12,654.5	2,502.2
Neutral Zone <sup>2</sup> .....	—	—	—	—	—	—	—	21,535.9
New Caledonia.....	—	—	—	186.3	—	—	—	—
New Guinea (Australia).....	39.0 <sup>3</sup>	22.5	—	—	—	—	—	—
New Zealand.....	8.9	—	—	1.1	—	—	763.9	1.1
Nicaragua.....	199.1 <sup>1</sup>	—	10.1	—	—	—	—	—
Nigeria.....	0.3	—	—	—	—	—	770.5	6,540.0
Norway.....	—	—	16.3	1,422.0	4.4	13.1	487.2	—
Pakistan.....	—	—	—	2.2	—	—	1,338.2	550.1
Peru.....	85.8	37,040.9	192.4	4,791.7	162.3	254.6	122.4	3,403.9
Philippines.....	425.8	852.0	66.7	858.7	0.1	2.3	126.8	—
Poland.....	—	—	16.0	815.7	42.2	166.2	129,360.6	310.9
Portugal.....	21.2	—	4.9	124.6	0.2	—	489.4	—
Qatar.....	—	—	—	—	—	—	—	11,173.0
Romania.....	—	—	—	681.2	14.0	—	6,494.8	13,663.1
Saudi Arabia.....	—	—	—	—	—	—	—	94,576.1
Sierra Leone.....	—	—	—	1,228.0 <sup>1</sup>	—	—	—	—
South Africa.....	29,111.5	2,916.1	65.3	3,457.9	—	—	49,511.4	—
South West Africa.....	—	—	37.9	—	98.2	35.3	—	—
Southern Rhodesia.....	575.4	90.0	18.3	580.9	—	—	3,355.4	—
Spain.....	23.8	—	8.8	2,672.0	63.4	110.2	13,186.9	—
Sudan.....	0.9	—	—	—	—	—	—	—
Surinam.....	8.2	—	—	—	—	—	—	—
Swaziland.....	2.1	—	—	—	—	—	—	—
Sweden.....	117.5	3,121.8	17.9	17,879.5	74.4	85.2	92.6	89.3
Switzerland.....	—	—	—	39.7	—	—	—	—
Tanzania, United Republic of.....	93.0	—	—	—	—	—	1.1	—
Thailand.....	—	—	—	126.8	3.9	1.5	—	—
Trinidad and Tobago.....	—	—	—	—	—	—	—	7,755.9
Trucial Oman.....	—	—	—	—	—	—	—	10,047.6
Tunisia.....	—	12.9	—	563.3	14.7	3.6	—	—
Turkey.....	—	—	31.1	644.9	7.1	5.7	4,904.2	972.2
Uganda.....	—	—	20.9	—	—	—	—	—
Union of Soviet Socialist Republics.....	—	—	771.6	93,279.8	396.8	451.9	450,701.9	246,480.0
United Arab Republic.....	—	—	—	245.8	—	—	—	7,004.1
United States.....	1,469.0	36,999.1	1,246.8	52,559.3	286.0	574.9	501,231.8	415,140.2
Venezuela.....	33.5	—	—	11,037.4	—	—	39.7	196,464.9
Viet-Nam—	—	—	—	—	—	—	—	—
North.....	—	—	—	—	—	—	3,747.9	—
Republic of.....	—	—	—	—	—	—	84.9	—
Yugoslavia.....	100.5	4,038.1	69.7	868.6	112.0	72.9	1,444.0	1,983.1
Zambia.....	5.0	977.4	697.0	—	14.7	51.8	—	—

<sup>1</sup> Exports. and Kuwait.<sup>2</sup> Excludes Northern Ireland.  
<sup>3</sup> Includes Papua.<sup>3</sup> DBS figures.<sup>4</sup> Jointly shared by Saudi Arabia



Salmon became an important commercial product on the Canadian West Coast in the early 1880s and is still supreme among the nation's fishery products. Commercial fishermen alone catch between 16,000,000 and 22,000,000 salmon each year as they migrate to over 1,300 rivers and streams along the jagged coastline of British Columbia. This is a self-perpetuating resource of tremendous potential—wisely managed, it can produce wealth for the country forever.

# CHAPTER XIV.—FISHERIES AND FURS

## CONSPECTUS

	PAGE		PAGE
<b>Part I.—Fisheries</b> .....	597	Subsection 1. The Federal Government..	609
SECTION 1. THE DEVELOPMENT OF CANADA'S SEA FISHERIES.....	597	Subsection 2. The Provincial Govern- ments.....	613
SECTION 2. COMMERCIAL FISHING AND MARKETING, 1965.....	599	<b>Part II.—Furs</b> .....	622
SECTION 3. FISHERY STATISTICS.....	601	SECTION 1. THE FUR INDUSTRY.....	622
Subsection 1. Primary Production.....	601	SECTION 2. FUR STATISTICS.....	624
Subsection 2. Fish Products.....	604	Subsection 1. Fur Production and Trade.	624
SECTION 4. GOVERNMENTS AND THE FISHERIES.....	607	Subsection 2. The Fur Processing In- dustry.....	628
		SECTION 3. PROVINCIAL AND TERRITORIAL FUR RESOURCE MANAGEMENT.....	629

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

## PART I.—FISHERIES\*

### Section 1.—The Development of Canada's Sea Fisheries

The vast prolific fishing grounds off Canada's Atlantic Coast have been of great economic value since the early days of settlement of the North American Continent. The heaviest landings by Canadian fishermen today are taken from these waters which first attracted Europeans in the late fifteenth century. Codfish so plentiful they could be lifted out of the ocean by the basketful were reported by navigator John Cabot when he returned from his 1497 voyage in quest of new lands for Henry VII of England. In those days, salt cod was something of a luxury food in England, its value being reckoned as high as 50 shillings a hundredweight as compared with four shillings and eightpence for meat. Markets for dried cod were also assured in the warm countries of the Mediterranean where there was a scarcity of storable protein foods and, as a consequence, it was profitable to send fishing vessels 2,000 miles over the sea to harvest the rich cod stocks off Newfoundland.

From the beginning, competition was keen among fleets of England, France, Spain and Portugal but the English eventually succeeded in dominating the fisheries, particularly in inshore areas. French operations were diverted to the offshore banks and the more remote areas of the Gulf of St. Lawrence, while Spain and Portugal were gradually eliminated from the fishery as a result of aggressive activity by the English.

Valuable fishery bases were first established by settlers in New England, and Nova Scotia assumed importance as a base of fishing operations after the movement of population from New England in the mid-eighteenth century. However, efforts to establish shore settlements in Newfoundland as operating bases were discouraged by English interests and expeditions of fishing fleets from that country continued until settlement in the island was finally sanctioned in the early nineteenth century and a resident population began to make its influence felt in the industry.

\* Sections 1, 2 and Subsection 1 of Section 3 were prepared by the Information and Consumer Service, Department of Fisheries, Ottawa.



Access to shore facilities in British North America for bait and other supplies and for curing the catch was a long contentious subject for the countries engaged in the west Atlantic fisheries, particularly between Britain on the one hand, and France and the United States on the other. The Treaty of Versailles (1783) granted St. Pierre and Miquelon to France and took away some but not all of the French fishing rights off the Newfoundland coast. French operations expanded on offshore grounds in the mid-1800s as a result of subsidization and the development of the trawl-line or bultow, but Newfoundland countered this competition by restricting, through legislation, the sale of bait to foreign fishermen. Thus, the fishing rights of the French on parts of the Newfoundland coast continued to present problems until they were purchased by Britain early in the present century.

The Versailles treaty also imposed restrictions on the United States fishing operations based in New England, and the Convention of 1818 restricted American rights in the territorial waters of the British colonies to those of "shelter and of repairing damages, of purchasing wood and obtaining water and to no other purpose whatsoever". Numerous clashes resulted from these restrictions, instigated by trading interests in Nova Scotia as a check on smuggling. However, conflict over American fishing rights was eased by the Reciprocity Treaty (1854-66) and the Treaty of Washington (1873-85). Under a *modus vivendi* negotiated in 1888, American fishermen, on payment of a licence fee, were permitted to use Canadian and Newfoundland harbours for the purchase of supplies, transshipment of catches and shipping of crews, an arrangement that continued until 1918; a treaty which was intended to replace that "temporary" arrangement was never concluded. Meanwhile, the principal source of conflict with the United States had disappeared with the decline of the New England salted fish industry. In Canada and Newfoundland, however, salted and dried fish—principally cod, with herring and mackerel of equal importance in certain districts—remained the staple product of the industry until the 1940s. Production of dried salted cod in the Atlantic Coast fisheries was at its peak in the 1880s, and began its decline with the disappearance of wooden shipping and the weakening of markets in the West Indies and other southern countries followed by increasing competition from other food products and the appearance of outlets for fresh fish.

Temporary revival was enjoyed by the dried salted codfish industry during the First World War, but in the immediately following years, producers in the Atlantic region, especially Newfoundland, were forced to seek new markets as European fleets had resumed production. Newfoundland fish was diverted to the West Indies, where competition with Nova Scotia, the traditional supplier, forced fish prices down by 50 p.c. between 1926 and 1939, with disastrous results for fishermen of both provinces. Another period of revival came during the Second World War but by 1945 the frozen fish industry began its upward climb and the dried cod trade declined just as steadily.

Development of commercial fisheries on the Pacific Coast was of much more recent origin than that of the Atlantic industry. Settlement had to come first and exploitation of fisheries resources on a commercial scale developed only in the mid-1800s. Growth of the industry was rapid and extensive as a result of the application of technological and transportation advances. Completion of the transcontinental railway to British Columbia in 1885 opened up populous Eastern Canada markets to fresh and frozen Pacific salmon and halibut. By the turn of the century, an active halibut fishery had developed and expanded to offshore grounds. The bait requirements of the halibut fishery in turn enabled the herring fishery to develop on a considerable scale.

The progress of the Canadian fishing industry through the past century may be said to have been characterized by a shift in the principal methods of preserving and storing fish and shellfish, emphasis changing from curing to canning, chilling and freezing. Canning of fish was first introduced in Canada about 1840, when factories were built in Maritime centres for the canning of salmon and lobster. Lobster canning took on increasing importance in the 1870s and expanded at a phenomenal rate, the number of canneries rising from 44 in 1873 to a peak of 917 in 1900. Later, competition and economic

conditions brought about a gradual reduction, accelerated more recently by the use of aircraft to transport live lobster to markets in Central Canada, the United States and Europe. Today, only about 50 canneries remain, but canned lobster, which includes heat-processed and fresh and frozen meat, is still the most valuable canned product produced in the Atlantic Provinces, although an important industry is centred in New Brunswick where young herring are canned and marketed as sardines.

The canning of salmon in British Columbia began about 1870, pioneered in part by individuals and firms with experience gained in lobster canning on the Atlantic Coast. These canneries, established at the mouths of rivers and inlets where salmon was caught, increased rapidly in number and output; by 1917 there were 94 in operation with an annual output exceeding 1,500,000 cases. However, salmon canning quickly developed into a streamlined operation featuring a high degree of mechanization and therefore a reduced labour force. This led to amalgamation of canning firms and the growth of large business organizations, so that today there are only about 20 canneries in production.

The development of filleting and quick-freezing techniques and improvement in transportation facilities gave strong impetus to the frozen fish industry in the inter-war period but scarcity of capital and restrictions on trawling operations hampered its growth. Some progress was made, notably in Nova Scotia, which succeeded in expanding sales of chilled groundfish fillets, live lobster and some other items. Processing and fishing bases were concentrated at the larger ports such as Halifax and Lunenburg. Concentration of operations in larger ports was also a distinguishing feature of the British Columbia industry in this period, but the process of mechanization and business integration out-paced the Atlantic Coast fisheries; a progressive approach and the amalgamation of plant and business organization provided the large-scale capital investment required. Unionization became another important factor in the British Columbia industry during the Second World War.

In the postwar period the Atlantic industry began extensive programs to expand productive capacity. Aided by the relaxation of government restrictions on the use of trawlers, fishery firms invested in the construction or purchase of larger vessels to replace the old-style dory or banking schooners used in offshore fishing. Freezing plants were built to process the increasing quantities of groundfish sold fresh by trawlers and inshore fishermen. Increased government subsidization, both federal and provincial, aided the construction of many new trawlers at Canadian shipyards. After Newfoundland became a province of Canada in 1949, the shift from salted codfish to fresh and frozen fish production in that province was speeded up by an inflow of public works improvements, financial aid to the industry and to fishermen, and expanded development and research projects. Other measures of assistance to the industry, involving cost-sharing on such projects between the federal and provincial governments, have been inaugurated under terms of the federal Fisheries Development Act passed in 1966 (see p. 608).

## Section 2.—Commercial Fishing and Marketing, 1965

Records for landed weight and value, exports and returns to fishermen were established in 1965. Canada's commercial fisheries, an industry that helped to shape the early development of civilization in North America, continue to be a valuable source of food and other products for the domestic and export markets, and provide a hardy but rewarding livelihood for many Canadians. The economic and sociological impact of the industry is, of course, most significant in the coastal and lake regions where some 80,000 fishermen participate in actual fishing, a number that has changed little in the past decade. The number of persons employed in fish processing plants has also shown little fluctuation, totalling about 15,000.

Founded upon cod, herring, salmon and lobsters—products in heavy demand in North American and European markets—the Canadian fishing industry in the mid-1960s is reaping the benefits of advancing technology and increased investment in catching and



processing equipment. In 1965, the market value of all fisheries production surpassed \$300,000,000 for the first time and, with shipments valued at a record \$213,000,000, Canada ranked second only to Japan among world fish exporters. Total landings of 2,400,000,000 lb. of all species of marine life, the heaviest ever recorded, grossed an estimated \$153,000,000 to the fishermen. These records were accomplished despite stiffening competition from other nations fishing on the same grounds and using even more powerful and more heavily mechanized vessels. There is, however, in progress in Canada a program of vessel construction and mechanization which should soon eliminate this disadvantage to Canadian fishermen.

In general, the year 1965 was a good one for commercial fishermen. In terms of both quantity and value, the increase over 1964 was about 3 p.c., although this increase was not enjoyed by all segments of the industry. In British Columbia, landings were lower than in 1964 but on the Atlantic Coast results were very good. No significant changes were noted in the freshwater fisheries.

The salmon fishery in British Columbia yielded only 86,000,000 lb., one of the lowest catches on record, and the canned salmon pack amounted to 913,000 cases compared with 1,255,000 in the previous year. The one bright spot in the salmon fishery was the troll fishery for coho. Halibut landings were slightly lower than in 1964 but prices to fishermen averaged a record 34 cents a pound and the landed value of \$12,600,000 was the highest ever reported. Herring catches for the year were down by 12 p.c. from 1964 but increased returns to fishermen boosted the landed value slightly higher than in the earlier year. A strike of herring fishermen for a month and a half at the start of the winter season contributed to the lower production. Fishing for groundfish, other than halibut, continued to expand in 1965; landings totalled 39,000,000 lb., an increase of 30 p.c. over the previous year.

On the Atlantic Coast, total landings reached 1,650,000,000 lb., valued to fishermen at \$94,000,000; this was an increase in production of 150,000,000 lb. and in value of \$10,000,000. Redfish, flounder and herring were the species showing a significant increase in volume and these species, together with scallops and lobsters, accounted for most of the increase in value. Landings and landed values in each province of the Atlantic region were higher than in 1964, although certain groups of fishermen, notably the inshore fishermen of some areas of Newfoundland and lobster fishermen along the Northumberland Strait, suffered declines in catch and income. In Newfoundland, considerably lower landings of inshore cod and lobster were more than offset by higher catches of flounder, redfish, turbot and herring. In Nova Scotia, landings were up 14 p.c., mainly because of higher catches of cod, redfish, herring and scallops; landed value rose by 18 p.c. Most of the increase in catch in New Brunswick was due to higher landings of herring. Prince Edward Island and Quebec were the only provinces reporting larger lobster catches than in 1964; total landings increased by 15 p.c. and 8 p.c., respectively, and value by 30 p.c. in each province.

For several years the output of Canada's primary fishing industry has been remarkably stable and has not moved, in any recent year, very far from 1,000,000 tons. Within each year a decline in the landings of one species, or one group of species, has been generally offset by an increase in the catch of others, leaving the total output unaffected. In addition, of course, many important species are subject to management control, which minimizes the variations in quantities caught each year. The requirements of the markets, however, have been growing slowly but steadily, especially in North America. About 10,000,000 people have been added to the population of this Continent in the past five years. During this period, per capita yearly consumption of fishery products has been about 12 lb., so that the additional 10,000,000 people created a demand for about 120,000,000 lb. of processed fish, or 250,000,000 lb. of raw material in the form of fish and shellfish. This interaction of a relatively inexpandable supply and expanding demand has resulted in a steadily rising price level for fishery products; in 1965 the value of exports of all fishery products was \$213,000,000, in 1964 it was \$202,000,000 and in 1961, \$143,000,000. Thus, in five years the value of such exports increased by almost 50 p.c.



The United States continues to be the most important market for Canada's fishery products, sales to that country in 1965 accounting for about 70 p.c. of the total value of such exports. This high percentage is partly accounted for by the fact that a substantial proportion of the exports to the United States are high-priced products such as lobsters in shell and lobster meat, scallops, swordfish, whitefish, lake trout and salmon. Virtually all of Canada's exports of fresh and frozen products from the Atlantic and inland provinces and a substantial share of those from British Columbia are sold in that country.

Exports to European countries in recent years have amounted to about one fifth to one third of the value of exports to the United States. Because of the gradual decline in the volume of salted fish exported to the traditional markets of Spain, Portugal and Italy, the products of the British Columbia industry have dominated the market. In 1965, exports of Canadian fishery products to Europe were valued at \$39,400,000, of which \$22,800,000 came from British Columbia. Sales of canned salmon have recently accounted for upwards of 50 p.c. of all fishery exports to Europe; the peak was reached in 1964 when canned salmon made up 55 p.c. of the total of \$46,000,000. The low salmon catch in 1965 affected the exports of the canned product for that year, the total value being only \$18,600,000, of which \$10,800,000 worth went to Britain.

The Caribbean area is a market for low-priced species prepared in inexpensive forms to meet the requirements of population having relatively low purchasing power. Traditional products are salted codfish, pickled mackerel and alewives and bloaters. Exports to this area in 1965 had a value of \$17,400,000 and showed little change in either value or product components from earlier years, although interruptions to commercial relationships occasioned by political disturbances occurred in some markets during the year.

### Section 3.—Fishery Statistics

The review of commercial fishing and marketing given in the preceding Section covers the situation in 1965 and contains estimated figures for that year. However, at the time of the preparation of this Chapter, the latest statistics available in detail for both the primary production and fish products were those for 1964 contained in the following Subsections.

#### Subsection 1.—Primary Production

The value of the 1964 catch of fish on the Atlantic Coast was at a very high level; it amounted to \$87,455,000, an increase of 15 p.c. over the 1963 value of \$76,174,000 and 26 p.c. over the five-year 1960-64 average of \$69,228,000. The lobster catch was somewhat lighter in 1964 than in the previous year but was still the most valuable at \$24,244,000; cod was second at \$22,055,000.

For the third consecutive year, the value of the catch by Newfoundland fishermen was substantially higher than that of the previous year. The value of landings of all species amounted to \$21,978,000, of which cod accounted for \$13,691,000. Cod landings at 369,601,000 lb. were lighter than in 1963, as were those of redfish and haddock.

The value of fish and shellfish landings by Nova Scotia fishermen in 1964 was \$40,977,000, a record level 17 p.c. above 1963. Lobsters and scallops continued to be the most important species from the standpoint of income to the fishermen, having a landed value of \$11,996,000 and \$7,025,000, respectively. Haddock was third at \$5,394,000, followed by cod, swordfish, flounder and sole, pollock and halibut. New Brunswick fishermen also landed a more valuable catch in 1964 than in 1963, although the increase was not as spectacular. Lobsters, herring and cod were the major sources of income to the fishermen, accounting for \$7,438,000 of the total value of \$10,277,000. The herring catch, which fluctuates widely from year to year, was 150,792,000 lb. in 1964 compared with the five-year 1960-64 average of 116,660,000 lb. Returns to Prince Edward Island fishermen in 1964 were \$5,642,000, 26 p.c. above the 1963 level. Lobsters, at

\$4,212,000, made up 75 p.c. of the total and oysters, at \$370,000, were next in importance. The value of Quebec landings in 1964 was little changed from 1963; a decrease in the value of cod taken was more than offset by an increase for redfish.

The value of British Columbia landings in 1964 was \$48,301,000, 19 p.c. higher than in 1963 but below the 1962 level. With salmon making up over half the total, the annual fluctuations in the volume of salmon species taken materially affect the total value of the catch. Landings of all species of salmon in 1964 amounted to 124,198,000 lb. compared with 119,324,000 lb. in the previous season. Chum, spring, coho and sockeye were all up. Herring landings on the other hand were 12 p.c. lower and had a value of \$6,167,000. Halibut landings were also lower but higher unit values resulted in an increase in value from \$8,249,000 to \$8,309,000. The 1964 catch of tuna at 249,000 lb. was well below the record catch of 487,000 lb. in 1962.

### 1.—Quantity and Value of Sea and Inland Fish Landed, by Province, 1960-64

NOTE.—Figures for the years 1918-59 are given in the corresponding table of previous Year Books beginning with the 1947 edition.

Province or Territory	1960 <sup>*</sup>	1961 <sup>*</sup>	1962 <sup>*</sup>	1963 <sup>*</sup>	1964 <sup>p</sup>
QUANTITY					
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland.....	573,771	503,079	549,341	594,961	583,381
Prince Edward Island.....	42,283	36,664	37,630	38,464	41,015
Nova Scotia.....	428,840	439,662	435,903	427,127	514,703
New Brunswick.....	232,662	147,925	204,511	234,888	254,027
Quebec.....	98,851	109,174	133,443	132,773	133,733
Ontario.....	47,600	54,951	63,780	54,342	43,508
Manitoba.....	31,944	30,658	36,105	35,738	28,636
Saskatchewan.....	14,530	14,515	14,999	14,089	14,306
Alberta.....	15,852	11,317	9,025	8,509	12,751
British Columbia.....	335,040	635,550	686,918 <sup>1</sup>	772,859 <sup>1</sup>	713,229 <sup>1,2</sup>
Northwest Territories.....	5,613	5,676	6,544	6,347	5,960
<b>Totals.....</b>	<b>1,826,986</b>	<b>1,989,171</b>	<b>2,178,199</b>	<b>2,320,097</b>	<b>2,345,249</b>
Sea Fish.....	1,703,892	1,866,098	2,041,168	2,196,270	2,234,769
Inland Fish.....	123,094	123,073	137,031	123,827	110,480
VALUE					
	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	15,713	14,717	17,222	20,086	21,978
Prince Edward Island.....	4,478	4,173	4,361	4,462	5,642
Nova Scotia.....	25,231	27,152	30,928	35,145	40,977
New Brunswick.....	9,320	7,699	9,182	9,320	10,277
Quebec.....	4,390	4,669	5,534	5,879	5,894
Ontario.....	4,983	5,746	5,341	5,498	5,222
Manitoba.....	3,867	3,174	4,229	4,356	3,720
Saskatchewan.....	1,367	1,385	1,478	1,300	1,490
Alberta.....	1,159	883	714	676	799
British Columbia.....	27,962	38,778	49,067 <sup>1</sup>	40,466 <sup>1</sup>	48,326 <sup>1,2</sup>
Northwest Territories.....	700	675	859	796	808
<b>Totals.....</b>	<b>99,170</b>	<b>109,051</b>	<b>128,915</b>	<b>127,984</b>	<b>145,133</b>
Sea Fish.....	86,405	96,600	115,570	114,687	132,432
Inland Fish.....	12,765	12,451	13,345	13,297	12,701

<sup>1</sup> Includes halibut landed in United States ports. Territory.

<sup>2</sup> Includes 930,000 lb. valued at \$25,000 landed in Yukon

## 2.—Quantity and Value of the Chief Commercial Fish Landed, 1963 and 1964

Area and Species	Quantity Landed <sup>1</sup>		Value Landed <sup>2</sup>	
	1963 <sup>2</sup>	1964	1963 <sup>2</sup>	1964
	'000 lb.	'000 lb.	\$'000	\$'000
<b>Atlantic Coast</b>				
<b>Groundfish</b> .....	<b>1,002,773</b>	<b>1,021,392</b>	<b>36,356</b>	<b>40,195</b>
Catfish.....	2,950	3,248	91	99
Cod.....	609,722	571,412	20,997	22,055
Flounder and sole.....	125,647	161,856	3,994	5,236
Haddock.....	90,981	106,311	4,915	6,228
Hake.....	18,425	18,606	518	574
Halibut.....	4,926	4,560	1,600	1,446
Pollock.....	56,580	56,957	1,712	1,832
Redfish.....	83,274	80,186	2,219	2,170
Other.....	10,268	18,256	310	555
<b>Pelagic and Estuarial</b> .....	<b>317,011</b>	<b>383,807</b>	<b>9,129</b>	<b>10,888</b>
Alewives.....	11,320	10,511	182	150
Herring.....	252,703	312,883	3,084	3,210
Mackerel.....	17,199	23,911	704	949
Salmon.....	4,052	4,533	1,834	2,073
Sardines.....	2	2	2	2
Smelts.....	3,147	4,141	227	315
Swordfish.....	12,589	11,855	2,594	3,561
Other.....	16,001	15,973	504	650
<b>Molluscs and Crustaceans</b> .....	<b>73,604</b>	<b>90,823</b>	<b>28,289</b>	<b>32,621</b>
Clams—				
Quahaugs.....	423	304	24	16
Soft-shelled.....	2,196	2,911	111	158
Lobsters.....	44,373	41,881	21,284	24,244
Oysters.....	4,286	3,828	478	461
Scallops.....	16,217	16,682	6,256	7,278
Other.....	6,109	25,217	136	464
<b>Other</b> .....	<b>...</b>	<b>...</b>	<b>2,400</b>	<b>3,751</b>
<b>Totals, Atlantic Coast</b> .....	<b>...</b>	<b>...</b>	<b>76,174</b>	<b>87,455</b>
<b>Pacific Coast</b>				
<b>Groundfish</b> .....	<b>54,671</b>	<b>57,361</b>	<b>9,556</b>	<b>10,065</b>
Cod.....	6,756	12,009	414	722
Halibut <sup>4</sup> .....	37,274	33,282	8,249	8,309
Ling cod.....	3,238	3,797	379	384
Sablefish.....	597	947	104	187
Sole.....	5,686	6,069	359	409
Other.....	1,120	1,247	51	54
<b>Pelagic and Estuarial</b> .....	<b>696,895</b>	<b>636,324</b>	<b>29,453</b>	<b>36,668</b>
Herring.....	572,202	505,287	6,477	6,167
Salmon.....	119,324	124,198	22,790	30,244
Chum.....	15,414	25,914	1,969	3,061
Coho.....	23,071	28,588	6,653	9,255
Pink.....	59,699	36,447	6,073	4,063
Sockeye.....	11,853	22,922	4,034	8,267
Spring.....	9,142	12,093	4,020	5,546
Other.....	145	234	36	62
Other.....	5,369	6,839	186	257
<b>Molluscs and Crustaceans</b> .....	<b>21,124</b>	<b>18,613</b>	<b>1,429</b>	<b>1,527</b>
Clams, butter, little neck, razor, etc.....	3,147	1,575	103	59
Crabs.....	3,405	4,351	405	699
Oysters.....	12,768	11,509	635	588
Shrimps and prawns.....	1,788	1,052	284	161
Other.....	16	126	2	20
<b>Other</b> .....	<b>...</b>	<b>...</b>	<b>54</b>	<b>176</b>
<b>Totals, Pacific Coast</b> .....	<b>...</b>	<b>...</b>	<b>40,492</b>	<b>48,436</b>

For footnotes, see end of table, p. 604.



## 2.—Quantity and Value of the Chief Commercial Fish Landed, 1963 and 1964—concluded

Area and Species	Quantity Landed <sup>1</sup>		Value Landed <sup>2</sup>	
	1963 <sup>3</sup>	1964	1963 <sup>3</sup>	1964
	'000 lb.	'000 lb.	\$'000	\$'000
<b>Inland</b>				
<b>Freshwater Fish</b> .....	<b>110,241</b>	<b>93,894</b>	<b>12,636</b>	<b>12,101</b>
Bass.....	1,997	1,849	277	285
Catfish.....	1,512	1,243	239	202
Herring, lake (cisco).....	2,375	1,993	77	63
Perch.....	19,488	10,537	1,503	1,805
Pickarel (yellow).....	16,115	11,652	3,715	2,916
Pike.....	8,357	8,073	409	397
Saugers.....	5,406	4,442	1,172	917
Sturgeon.....	394	438	234	228
Trout.....	3,517	3,384	478	464
Tullibee.....	8,160	13,778	624	835
Whitefish.....	25,279	22,954	3,387	3,450
Other.....	17,641	13,551	521	530
<b>Other</b> .....	<b>13,606</b>	<b>16,280</b>	<b>661</b>	<b>614</b>
<b>Totals, Inland</b> .....	<b>123,847</b>	<b>110,174</b>	<b>13,297</b>	<b>12,715</b>
<b>Grand Totals</b> .....	<b>...</b>	<b>...</b>	<b>129,963</b>	<b>148,606</b>

<sup>1</sup> Excludes livers.<sup>2</sup> Includes value of livers and liver products.<sup>3</sup> Included with "Herring".<sup>4</sup> Includes landings by Canadian fishermen in United States ports.

## 3.—Persons Employed in the Primary Fishing Industry, by Province, 1962-64

Province or Territory	Sea Fisheries			Inland Fisheries		
	1962	1963	1964	1962	1963	1964
	No.	No.	No.	No.	No.	No.
Newfoundland.....	19,817	21,407	22,615	—	—	—
Prince Edward Island.....	3,367	3,372	3,329	—	—	—
Nova Scotia.....	12,711	13,467	13,333	—	—	—
New Brunswick.....	6,016	5,833	5,790	157	144	150
Quebec.....	3,786	3,674	3,512	1,031	658	781
Ontario.....	—	—	—	2,993	3,271	2,952
Manitoba.....	—	—	—	5,614	5,837	5,642
Saskatchewan.....	—	—	—	1,850	1,827	2,010
Alberta.....	—	—	—	4,563	5,117	4,211
British Columbia.....	16,437	16,624	13,300	—	—	—
Northwest Territories.....	—	—	—	476	453 <sup>2</sup>	438
<b>Totals</b> .....	<b>62,134</b>	<b>64,377</b>	<b>61,879</b>	<b>16,684</b>	<b>17,307<sup>2</sup></b>	<b>16,184</b>

## Subsection 2.—Fish Products

According to commodity surveys conducted by the Dominion Bureau of Statistics, the value of sea and inland fish products produced at all industrial levels, including the value to fishermen, amounted to \$293,460,000 in 1964; this was an increase of 12.7 p.c. over 1963 and the highest amount on record. Most of the increase over 1963 took place in the Atlantic Provinces.

## 4.—Value of All Products of the Fisheries, by Province, 1960-64

NOTE.—Figures for the years 1917-59 are given in the corresponding table of previous Year Books beginning with the 1922-23 edition. Totals for five-year intervals from 1870 are given in the 1956 edition, p. 597.

Province or Territory	1960	1961	1962	1963 <sup>2</sup>	1964
	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	33,783	33,119	38,883	43,797	46,591
Prince Edward Island.....	7,261	6,046 <sup>2</sup>	6,403	6,608	8,293
Nova Scotia.....	51,753	54,689 <sup>2</sup>	67,380	77,721	90,531
New Brunswick.....	33,130	26,379 <sup>2</sup>	33,087	33,424	32,223
Quebec.....	7,622	8,131	10,625	10,821	11,406
Ontario.....	5,606	6,464	6,009	6,192	5,875
Manitoba.....	7,035	6,214	7,979	7,563	6,885
Saskatchewan.....	2,830	3,166	3,115	2,711	3,082
Alberta.....	2,021	1,701	1,234	1,125	1,122
British Columbia.....	53,983	78,758	100,057 <sup>1,2</sup>	80,114 <sup>1</sup>	97,940 <sup>1</sup>
Northwest Territories.....	1,075	1,179	1,231	1,330	1,215
<b>Totals<sup>2</sup>.....</b>	<b>193,005</b>	<b>222,879</b>	<b>260,986</b>	<b>260,311</b>	<b>293,460</b>
Saltwater products.....	178,750	203,568	240,694	240,719	274,496
Freshwater products.....	19,255	19,311	20,292	19,592	18,964

<sup>1</sup> Includes landings by Canadian fishermen in United States ports.

<sup>2</sup> Totals differ from the sum of provincial totals because duplications resulting from inter-shippments between provinces are removed.

5.—Marketed Value of All Products of the Fisheries,<sup>1</sup> by Area and Species, 1963 and 1964

Area and Species	1963 <sup>2</sup>	1964
	\$'000	\$'000
<b>Atlantic Coast</b>		
<b>Groundfish.....</b>	<b>91,494</b>	<b>96,731</b>
Catfish.....	301	343
Cod.....	48,914	46,764
Flounder and sole.....	10,359	12,138
Haddock.....	12,979	15,552
Hake.....	823	1,182
Halibut.....	2,167	2,040
Pollock.....	4,394	4,910
Redfish.....	4,314	4,850
Other.....	7,243	8,952
<b>Pelagic and Estuarial.....</b>	<b>26,236</b>	<b>26,299</b>
Alewives.....	271	269
Herring.....	6,566	7,090
Mackerel.....	1,674	1,771
Salmon.....	2,682	3,625
Sardines.....	9,852	7,424
Smelts.....	357	409
Swordfish.....	3,733	4,650
Other.....	1,101	1,061
<b>Molluscs and Crustaceans.....</b>	<b>38,378</b>	<b>47,209</b>
Clams—		
Quahogs.....	34	59
Soft-shelled.....	272	273
Lobsters.....	26,253	32,223
Oysters.....	683	629
Scallops.....	10,777	12,702
Other.....	359	1,323
<b>Other.....</b>	<b>4,497</b>	<b>6,317</b>
<b>Totals, Atlantic Coast.....</b>	<b>160,605</b>	<b>176,556</b>

<sup>1</sup> Includes value of livers and liver products.

5.—Marketed Value of All Products of the Fisheries,<sup>1</sup> by Area and Species, 1963 and 1964—  
concluded

Area and Species	1963 <sup>2</sup>	1964
	\$'000	\$'000
<b>Pacific Coast</b>		
<b>Groundfish</b> .....	<b>12,679</b>	<b>12,873</b>
Cod.....	705	1,160
Halibut <sup>2</sup> .....	10,541	10,104
Ling cod.....	517	569
Sablefish.....	163	273
Sole.....	643	662
Other.....	110	105
<b>Pelagic and Estuarial</b> .....	<b>62,380</b>	<b>78,984</b>
Herring.....	11,697	11,561
Salmon.....	48,898	63,044
Chum.....	4,866	7,196
Coho.....	11,377	16,376
Pink.....	18,550	12,553
Sockeye.....	8,499	18,231
Spring.....	5,435	7,662
Other.....	671	1,036
Other.....	1,785	4,379
<b>Molluscs and Crustaceans</b> .....	<b>2,729</b>	<b>2,641</b>
Clams, butter, little neck, razor, etc.....	340	190
Crabs.....	1,000	1,440
Oysters.....	781	647
Shrimps and prawns.....	573	313
Other.....	35	51
<b>Other</b> .....	<b>2,326</b>	<b>3,442</b>
<b>Totals, Pacific Coast</b> .....	<b>80,114</b>	<b>97,940</b>
<b>Inland</b>		
<b>Freshwater Fish</b> .....	<b>18,878</b>	<b>18,292</b>
Bass.....	311	358
Catfish.....	260	218
Herring, lake (cisco).....	82	71
Perch.....	1,728	2,070
Pickering (yellow).....	5,283	4,352
Pike.....	1,098	1,042
Saugers.....	1,790	1,624
Sturgeon.....	260	242
Trout.....	887	850
Tullibee.....	769	1,071
Whitefish.....	5,580	5,645
Other.....	830	749
<b>Other</b> .....	<b>714</b>	<b>672</b>
<b>Totals, Inland</b> .....	<b>19,592</b>	<b>18,964</b>
<b>Grand Totals</b> .....	<b>260,311</b>	<b>293,460</b>

<sup>1</sup> Includes value of livers and liver products.

<sup>2</sup> Includes landings by Canadian fishermen in United States ports.

The annual output of canned salmon fluctuates considerably with the extent of the catch, as is shown in Table 6. This product has long been the most important of the industry, but the demand for Atlantic Coast frozen groundfish fillets and blocks has been rising so rapidly that the value of these products now runs a close second. In fact, in 1960 and 1963, years of low canned salmon production, the value of the Atlantic products was in first place.



**6.—Pacific Coast Production of Canned Salmon, 1962-64**

Species	1962		1963		1964	
	Quantity	Value	Quantity	Value	Quantity	Value
	cases <sup>1</sup>	\$'000	cases <sup>1</sup>	\$'000	cases <sup>1</sup>	\$'000
Chum.....	134,483	3,025	119,190	2,547	232,722	5,010
Coho.....	187,735	6,886	157,481	5,478	204,732	8,179
Pink.....	1,188,662	30,337	757,453	17,863	464,107	12,142
Sockeye.....	297,717	15,344	158,375	8,325	343,358	18,088
Spring.....	7,175	186	10,000	230	9,127	224
Steelhead.....	814	23	772	21	1,262	34
<b>Totals.....</b>	<b>1,816,586</b>	<b>55,801</b>	<b>1,203,271</b>	<b>34,464</b>	<b>1,255,308</b>	<b>43,677</b>

<sup>1</sup> 48 lb.**7.—Atlantic Coast Production of Frozen Fillets and Fish Blocks, 1962-64**

Area and Species	1962		1963		1964	
	Quantity	Value	Quantity	Value	Quantity	Value
	'000 lb.	\$'000	'000 lb.	\$'000	'000 lb.	\$'000
<b>Newfoundland.....</b>	<b>72,179</b>	<b>16,780</b>	<b>77,827</b>	<b>18,900</b>	<b>82,020</b>	<b>19,498</b>
Cod.....	41,801	9,136	47,359	11,051	50,141	10,799
Haddock.....	11,499	2,769	4,225	1,230	3,217	907
Redfish.....	9,851	2,342	13,093	2,920	11,223	2,559
Flatfish.....	8,105	2,326	12,016	3,444	16,324	4,965
Other.....	923	207	1,134	255	1,105	268
<b>Maritimes.....</b>	<b>77,978</b>	<b>19,550</b>	<b>81,345</b>	<b>19,921</b>	<b>93,867</b>	<b>24,658</b>
Cod.....	32,457	7,253	30,202	6,630	30,663	7,250
Haddock.....	16,743	5,088	17,542	5,242	25,541	8,055
Redfish.....	4,260	1,397	6,172	1,536	4,418	1,086
Flatfish.....	12,414	3,828	26,183	6,343	33,060	8,236
Other.....	12,104	1,984	1,246	170	185	31
<b>Quebec.....</b>	<b>15,659</b>	<b>3,060</b>	<b>16,442</b>	<b>3,484</b>	<b>16,791</b>	<b>3,459</b>
Cod.....	12,238	2,360	12,010	2,417	10,121	2,043
Other.....	3,421	720	4,432	1,067	6,670	1,416
<b>Totals, Atlantic Coast.....</b>	<b>165,816</b>	<b>39,410</b>	<b>175,614</b>	<b>42,305</b>	<b>192,678</b>	<b>47,615</b>
Cod.....	86,496	18,749	89,571	20,098	90,925	20,092
Haddock.....	28,358	7,883	21,767	6,472	28,758	8,962
Redfish.....	16,079	4,106	19,265	4,456	15,641	3,645
Flatfish.....	21,725	6,461	38,199	9,787	49,394	13,201
Other.....	13,158	2,211	6,812	1,492	7,960	1,715

**Section 4.—Governments and the Fisheries**

Under the British North America Act, the Federal Government has full legislative jurisdiction for the coastal and inland fisheries of Canada. The Federal Parliament therefore enacts all laws for the protection, conservation and development of the fisheries and responsibility for the administration and enforcement of these laws is vested in the federal Department of Fisheries. In some provinces, however, this administration has been delegated, by arrangement, to provincial agencies.

Specifically, the federal Department of Fisheries administers all tidal or sea fisheries except those of the Province of Quebec, and also the freshwater or non-tidal fisheries of the four Atlantic Provinces, the Yukon Territory and the Northwest Territories. The Provinces of Ontario, Manitoba, Alberta and Saskatchewan administer their own freshwater fisheries and in British Columbia the provincial government controls freshwater species but the Federal Government is responsible for marine and anadromous species. Administration of the fisheries of National Park areas throughout Canada is the responsibility of the Canadian Wildlife Service, Department of Indian Affairs and Northern Development.

**Federal-Provincial Relations.**—The mutual interest of federal and provincial governments in fisheries problems is recognized in the undertaking of joint studies and programs, frequently on a regional basis. Regional committees established in recent years have brought together representatives of all governments concerned for periodic discussion. Four groups have evolved: the Federal-Provincial Atlantic Fisheries Committee consisting of representatives of the Federal Government and of the Governments of New Brunswick, Newfoundland, Nova Scotia, Prince Edward Island and Quebec; the Federal-Provincial Committee for Ontario Fisheries; the Federal-Provincial Prairie Fisheries Committee comprising representatives of the Federal Government and of the Governments of Alberta, Manitoba and Saskatchewan; and the Federal-Provincial British Columbia Fisheries Committee.

Members of the Committees are the Deputy Minister of Fisheries of Canada and the Deputy Ministers of provincial departments responsible for fisheries. Sub-committees make recommendations for industrial development, research and marketing problems. The main committee in each case co-ordinates, where practicable, all activities in the respective fields of responsibility of its members and suggests to the respective governments means of carrying out fisheries programs and projects of common concern. These include the development of methods and techniques in the catching of fish and of shore and plant facilities, and studies of the economics of fisheries to ensure that any proposed program of development is soundly based.

Co-operation between the federal Department of Fisheries and the provinces has taken the form of cost-sharing arrangements on joint projects. Legislation enacted in 1966 grants to the federal Department of Fisheries further powers to enter into such agreements for purposes of modernizing, mechanizing and diversifying the nation's fisheries. The Fisheries Development Act (SC 1966, c. 18), approved by the House of Commons on Apr. 25, 1966 and given Royal Assent on May 12, 1966, served to streamline the operations of the Department by incorporating several of the development activities undertaken under earlier legislation. It empowers the Minister of Fisheries to undertake projects "(a) for the more efficient exploitation of fishery resources and for the exploration for and development of new fishery resources and new fisheries; (b) for the introduction and demonstration to fishermen of new types of fishing vessels and fishing equipment and of new fishing techniques; and (c) for the development of new fishery products and for the improvement of the handling, processing and distribution of fishery products." The Act authorizes the Minister to enter into cost-sharing agreements with provinces, with private companies and with individuals or co-operatives. Financial assistance may be given for the construction and equipment, or modification, of commercial cold storages and mechanically refrigerated bait-freezing facilities to be used for the preservation of fishery products, and for the construction and equipment of fishing vessels. The Act also authorizes the conduct of economic studies in conjunction with universities or other educational institutions and provides for the establishment of advisory committees to assist in the implementation of fisheries development programs.

### Subsection 1.—The Federal Government

The work of the Federal Government in the conservation, development and general regulation of the nation's coastal and freshwater fisheries is performed by three agencies under the Minister of Fisheries:—

- (1) The federal Department of Fisheries with headquarters at Ottawa, Ont., and regional offices under Regional Directors at Vancouver, B.C., Winnipeg, Man., Quebec, Que., Halifax, N.S., and St. John's, Nfld.
- (2) The Fisheries Research Board of Canada with headquarters at Ottawa and biological, technological and oceanographic stations across Canada.
- (3) The Fisheries Prices Support Board with headquarters at Ottawa.

A brief outline of the functions of each of these agencies is given in this Subsection.

**The Department of Fisheries.**—Canada's federal fisheries service began with Confederation in 1867 but it functioned as a branch of other departments until 1930, when legislation was enacted to establish a separate Department of Fisheries. The chief responsibilities of the Department are, in brief: to conserve and develop Canada's primary fishery resources; to encourage the development of the fishing industry in the national economy; to inspect fish products, establish standards of quality and promote the maximum utilization of the fishery resources; and to develop a proper public understanding of the resources and the industry. Services rendered by the Department have been revised and broadened with the times; increased attention has been paid in recent years to the development aspects of the fisheries. About 2,000 persons are employed by the Department, most of them in conservation, inspection, protection and administration duties in fishing areas across the country. The Ottawa headquarters staff numbers about 200.

A Departmental reorganization, initiated in 1965, brought about certain structural changes, including the division of the former Conservation and Development Service into two separate Services—the Conservation and Protection Service, concerned mainly with administration of programs for protection of fish stocks and enforcement of regulations under the Fisheries Act and other legislation, and the Resource Development Service, responsible for developing programs to preserve and extend fish stocks through the application of scientific and technical knowledge. The importance of Canada's participation in international commissions and agreements respecting fisheries was reflected in the designation of an Assistant Deputy Minister to assume responsibility for international and jurisdictional affairs, and the creation of an International Fisheries Service. Another Assistant Deputy Minister is responsible for all services engaged in the day-to-day activities of the Department.

The Industrial Development Service, established in 1955, carries out a wide range of development programs to aid fishermen and the fishing industry. Projects undertaken either on its own or jointly with provincial agencies are designed to test and demonstrate technological innovations for improvement of catching, processing or distribution of fish and of fishery products. The Economics Service has two Branches—the Economics Intelligence and Research Branch provides the Government and the commercial fishing industry with current information under the general heading of trade intelligence, and the Planning and Policy Analysis Branch carries out studies and investigations in the primary fisheries and in the processing and distribution of fish products. The Inspection Service is responsible for the inspection of fish and fish products to ensure the maintenance of quality standards and controls. Field officers are regularly stationed at major fish-processing centres and 17 permanent or mobile fish inspection laboratories are operated in Atlantic, inland and Pacific fishing areas. A Special Programs Service, established in 1965, administers programs for economic aid to fishermen and the fishing industry, including the Fishermen's Indemnity Plan, the Newfoundland Bait Service and the Salt Assistance Plan. Periodic requests are received for assistance to compensate for storm damage to fishing gear and in 1965 special assistance was provided to inshore fishermen affected by poor returns.



The Information and Consumer Service is responsible for informing the fishing industry, fishermen and the general public on activities of the Department through the distribution across the country of printed material, films and filmstrips, and radio and television material. The Consumer Branch of the Service operates test kitchens in major population centres and carries out demonstrations, lectures and publicity programs to promote the consumption of fishery products.

*International Fisheries Conservation.*—Cognizant of the problems of conservation in fisheries exploited on the high seas, Canada has long been a leading proponent of and participant in international conferences, conventions and treaties with other countries involved in fisheries. The federal Department of Fisheries assumes a major responsibility for the negotiation, revision and implementation of international fisheries treaties on behalf of the Government of Canada. Canada is now a party to seven international fisheries conventions:—

- (1) the Convention between Canada and the United States for the preservation of the halibut fishery of the northern Pacific Ocean and Bering Sea;
- (2) the Convention between Canada and the United States for the protection, preservation and extension of the sockeye and pink salmon fisheries in the Fraser River system;
- (3) the International Convention for the High Seas Fisheries of the North Pacific Ocean between Canada, Japan and the United States;
- (4) the Interim Convention on Conservation of North Pacific Fur Seals between Canada, Japan, the Soviet Union and the United States;
- (5) the International Convention for the Northwest Atlantic Fisheries;
- (6) the Convention on Great Lakes Fisheries between Canada and the United States; and
- (7) the International Convention for the Regulation of Whaling.

The federal Department of Fisheries is represented on each of these Commissions by one of its senior officers.

The first international agreement contracted by Canada as an independent nation was a treaty negotiated with the United States in 1923 for the protection of halibut stocks of the Pacific Ocean. An international commission established under that treaty was given broader regulatory powers in subsequent conventions, most recently in 1953 when its name was changed to the International Pacific Halibut Commission.

The International Pacific Salmon Fisheries Commission has achieved much success toward rehabilitation of depleted salmon stocks in the Fraser River of British Columbia. Discussions were held in 1965 and 1966 between representatives of Canada and the United States to consider revision of the 1956 protocol which brought pink salmon of the convention area within the scope of the Commission's activities. Negotiations also took place during the same period in an endeavour to reach agreement on problems arising from the intermingling of salmon bound for rivers of northern British Columbia and southeastern Alaska.

Protection of the high seas fisheries of the North Pacific Ocean is the objective of the International North Pacific Fisheries Commission established under a convention ratified in 1953 by Canada, Japan and the United States. The Commission conducts co-ordinated scientific research programs and recommends conservation measures to be undertaken by the contracting parties.

Fur seal stocks of the North Pacific and its adjacent seas are protected by the Interim Convention on Conservation of North Pacific Fur Seals which was ratified in 1957 by Canada, Japan, the Soviet Union and the United States, and amended by a protocol in 1964. This convention was preceded by an international treaty signed in 1911 which prohibited the killing of fur seals at sea—a measure which, aided by careful management programs, made possible the restoration of depleted seal herds. At the present time under the terms of the convention, Canada and Japan each receives annually 15 p.c. of the seal skins taken on the United States-controlled Pribilof Islands, and 1,500 skins from the harvest of the Commander and Robben Islands which are under control of the Soviet Union.

The International Commission for the Northwest Atlantic Fisheries conducts studies and makes recommendations for measures to conserve and develop the fish stocks off Canada's East Coast. The convention under which the Commission was established was signed in 1949 and has since been ratified by 13 nations: Britain, Canada, Denmark, the Federal Republic of Germany, France, Iceland, Italy, Norway, Poland, Portugal, Spain, the Soviet Union and the United States.

A Canadian proposal to bring the conservation of harp and hood seals of the Northwest Atlantic under the ICNAF Convention received endorsement by the last of the 13 member nations in April 1966, thus making it possible to initiate an international conservation program.

A draft international convention for the conservation of tuna and tuna-like fishes of the Atlantic Ocean was discussed at a 17-nation conference in Rio de Janeiro, Brazil, in May 1966. Canada was represented at the conference which considered proposals for establishment of an international commission to study tuna stocks and to recommend maximum catch levels for the various species.

Canada is a member of the International Whaling Commission and is obligated to submit statistical data on whales caught by Canadian vessels and to conduct scientific studies on whale stocks of special interest to Canada.

Another international fisheries agreement to which Canada is a signatory is the Great Lakes Fisheries Convention, which provides for joint action by Canada and the United States in Great Lakes fishery research and in a program for the control of the predatory lamprey in these waters. This convention came into force in 1955.

While co-operating with other nations to conserve high seas fisheries resources through international agreement, Canada acted in 1964 to protect inshore fisheries by establishing a 12-mile exclusive fishing zone on all coasts. The Territorial Sea and Fishing Zones Act proclaimed in that year has since been enforced against all countries except those having traditional fishing rights. Negotiations have been conducted with these latter countries with regard to the application of the fishing zone and to the location of the baselines from which the fishing zone is measured.

**The Fisheries Research Board of Canada.**—The Fisheries Research Board is a research organization established by Act of Parliament (RSC 1952, c. 121) for the purpose of conducting basic and applied research on Canada's living aquatic resources, their environment and their utilization. Its antecedents go back to 1898 and it is thus the lineal descendant of one of the oldest scientific organizations in Canada and one of the oldest government-supported research organizations under the supervision of an independent scientific board in North America.

By its Act, the Board is placed under the control of the Minister of Fisheries. The Board proper consists of a permanent chairman, who is appointed by the Governor in Council and who is a member of the Public Service of Canada, and "not more than eighteen other members" holding honorary appointments from the Minister of Fisheries for five-year terms; the Act requires that "a majority of the members of the Board, not including the chairman, shall be scientists, and the remaining members of the Board shall be representative of the Department [of Fisheries] and the fishing industry". The scientific members are drawn principally from universities and research foundations across Canada, to include specialists in disciplines related to the Board's work. The industry members are selected from among Canada's leading business men with an intimate knowledge of fishing and the fishing industry and the Department of Fisheries representative is usually a senior staff member in Ottawa. Board members have both advisory and executive functions. The advisory functions are delegated in the first instance to regional Advisory Committees who conduct on-the-spot regional reviews and report to the Board on the operations and scientific programs with a view to their improvement. The executive functions are delegated to an Executive Committee elected from Board members and approved by the Minister.

The operations of the Board are highly decentralized, there being only a small administrative, supervisory and publications staff in Ottawa. The responsibilities of the Ottawa office include administration of a grant program to encourage university research in the fields of marine and aquatic science. The Board employs approximately 900 persons, of whom about 250 are scientists.

*Biology.*—The biological program of the Board is designed to add to fundamental knowledge concerning Canada's vast living marine and freshwater resources. Included here are life history, population and behaviour studies leading to a sound scientific basis for the conservation and management of the commercially important fisheries including those for lobsters, crabs, shrimps, oysters, scallops, clams, marine mammals and other well-known economically important aquatic species of animals, such as salmon, cod, herring and halibut, as well as some marine plants, such as phytoplankton and seaweeds. Also included are studies in fish and shellfish diseases, fish enemies including the ill effects of water pollution, and such basic studies as fish genetics, physiology and behaviour, the latter with a view to improving fish cultural and farming methods and also to improving fish farm and hatchery stocks. Besides these basic studies, new fishing grounds and new species for exploitation are sought and experiments in improving fishing methods are undertaken.

The biological work on the Atlantic Coast is conducted out of research stations located in St. Andrews, N.B., and St. John's, Nfld.; work on arctic fisheries and on sea mammals is directed from a laboratory situated in Ste. Anne de Bellevue, Que.; freshwater work is carried out from a station in Winnipeg, Man.; and work on the Pacific Coast is directed from research laboratories situated in Nanaimo, B.C. The Board operates 18 research vessels for its biological studies, varying from small inshore and lake craft to specially built seagoing ships. The Board acts as Canada's research agent for three international fisheries commissions and two international sea-mammal commissions to which Canada is party.

*Oceanography.*—Oceanography includes the study of the marine (and freshwater) environment in which aquatic organisms live. This is under continuing study to further knowledge in primary and secondary productivity and the occurrence of ocean and freshwater life of importance to man. Encompassed here also are investigations into the distribution and physical and chemical characteristics of major ocean currents and the physical and biological structure of large ocean areas including the ocean bottom where concentrations of fish and other aquatic life occur. Ocean climate and ocean weather as they affect the distribution of fish and other living organisms as well as the vertical and horizontal distribution of nutrient matter and the cycle of energy and life in the seas are regularly observed and correlated. These studies, as well as special studies of interest to the Royal Canadian Navy, the Department of Transport and the international fishery commissions, are carried out by the Board's two oceanographic groups operating from Dartmouth, N.S., and Nanaimo, B.C., with strong ship support from the Navy and the Department of Transport, and co-operation from the Department of Energy, Mines and Resources.

*Technology.*—Investigations are conducted toward improving methods of preserving processing, storing and distributing fish products, as well as of utilizing all parts of the fish. These include developments in refrigeration and the use of antibiotics as fish preservatives, of improved refrigerated rail cars for fish distribution, improvements in canning, smoking and salting of fish as well as the development of new products such as protein concentrates (fish flour) and new uses such as the development of wieners for the utilization of abundant species that are not now used for food. Fundamental studies of the structure and composition of fish proteins, fish oils, fish hormones, the energy expenditure of migrating salmon and the nutrition of marine bacteria are under way.

Technological investigations on the Atlantic Coast are carried out at research laboratories situated in Halifax, N.S., and Grande Rivière, Que., and applied work for New



foundland is carried out at a Technological Unit in St. John's. For inland areas technological work is centred at Winnipeg, Man., and a research laboratory in Vancouver, B.C., undertakes investigation of Pacific Coast problems.

**The Fisheries Prices Support Board.**—The Fisheries Prices Support Board, established in 1947, is responsible for investigating and, where appropriate, recommending government action to support prices of fishery products where declines are experienced. The basic principle of the legislation is to protect fishermen against sharp declines in prices and consequent loss of income. The Board is responsible to the Minister of Fisheries and consists of a chairman, who is a senior officer of the Department of Fisheries, and five members chosen from the fishing industry in the various fishing regions of Canada.

The Board has authority to buy quality fishery products under prescribed conditions and to dispose of them by sale or otherwise, or to pay to producers the difference between a price prescribed by the Board and the average price the product actually commands. The Board has no power to control prices other than its purchase policy nor has it any jurisdiction over operations in the fishing industry or the fish trade. Money necessary for dealings in fishery products is available to the Board from the Consolidated Revenue Fund to a maximum amount of \$25,000,000 annually on recommendation of the federal Treasury Board and authorization of the Governor in Council.

In 1965, because of market disruption resulting from political disturbances in the Dominican Republic, the Board purchased up to \$300,000 worth of salted hake, pollock and cusk from exporters in Nova Scotia, New Brunswick and Prince Edward Island, up to \$190,000 worth of salted cod from Newfoundland and up to \$10,000 worth of salted cod from Quebec. The salted hake, pollock and cusk was donated to the Dominican Republic and part of the salted cod went to Kenya and Guyana under the World Food Program; the remainder of the cod was disposed of because of deterioration.

The Board co-operates with the Economics Service of the Department of Fisheries in the collection and analysis of costs of fishing operations and, in co-operation with the Department of Trade and Commerce, maintains a continuous review of the markets for various fishery products. A small staff is maintained for administrative activities at headquarters of the Board in Ottawa.

### Subsection 2.—The Provincial Governments\*

An outline of the work undertaken by each of the provincial governments in connection with administration of commercial and game fisheries is given in the following paragraphs.

**Newfoundland.**—The provincial Department of Fisheries in conjunction with the Newfoundland Fisheries Development Authority, a Crown corporation established in 1953, is concerned mainly with the improvement and development of fishing and production methods. It conducts experiments and demonstrations in longlining, Danish seining and otter trawling, in the construction of multi-purpose fishing craft, and in the exploration of potential fishing grounds.

Loans are made to processors for the establishment and expansion of fish processing plants and for deepsea draggers and also to fishermen for the construction and purchase of modern vessels capable of a greater variety of fishing operations and larger production. Fishermen receive further aid through bounty payments at the rate of \$160 a ton for newly constructed vessels under the Fishing Ships (Bounties) Act, 1955. The Fishing and Coasting Vessels Rebuilding and Repairs (Bounties) Act, 1958 authorizes the government to assist financially in maintaining and prolonging the life of the existing fleet. The Coasting Vessels (Bounties) Act, 1959 authorizes the granting, for locally built ships, of a maximum bounty of \$300 a ton for vessels measuring from 15 to less than 100 gross tons,

\* Prepared by the respective provincial departments responsible for fisheries administration.

and \$150 a ton for vessels of between 100 and 400 gross tons. An Inshore Fisheries Assistance Programme provides a maximum bounty of \$10 a foot on boats measuring from 24 to 35 feet and bounties are paid to fishermen on certain types of nylon and other synthetic fibre fishing nets and lines.

Other services include: advisory services to fishermen on gear and equipment, industrial research, plant construction, plant engineering and economics; assistance to fishermen's unions; weather and ice reports; and search and rescue. The Fisheries Salt Act, 1957 provides for rigid control over the use of fisheries salt.

*Sport Fisheries.*—The inland waters of Newfoundland, although they provide excellent sport fishing, are not commercially exploited. The lakes and ponds actually remain under the authority of the Natural Resources Branch of the provincial Department of Mines, Agriculture and Resources but, under federal-provincial agreement, these waters, including rivers and streams, are under federal control in matters of conservation and guardianship.

**Prince Edward Island.**—The sea and inland fisheries of Prince Edward Island are administered by the Federal Government. The provincial Department of Fisheries supplements federal activity and is concerned mainly with development of the fisheries industry. The Department provides technical assistance and, in conjunction with the Fisheries Research Board of Canada and branches of the federal Department of Fisheries, engages in some experimental work.

Financial assistance is made available to fishermen through the Fishermen's Loan Board of Prince Edward Island, a body corporate operating under the provincial Department. The Fishermen's Loan Board operates under authority given by the Re-establishment Assistance Act and regulations thereunder, approved by the Lieutenant-Governor in Council, Jan. 7, 1949, with amendments. Loans are made to fishermen and companies for the purchase of boats, engines and other deck machinery at an interest rate of 4 p.c. Loans for the construction or expansion of processing plants are available through the Industrial Establishments Promotion Act, the Prince Edward Island Industrial Corporation or the Industrial Enterprises Limited, under which loans may be made for facilities handling fishery products.

*Sport Fisheries.*—Game fisheries are the responsibility of the Department of Fisheries. The streams of the province, mostly spring-fed and fairly constant in flow, provide very favourable conditions for the reproduction of game fish, of which speckled trout is the most important variety. Investigations concerning the production of trout of a size attractive to anglers are being conducted by the Fisheries Research Board of Canada at sites provided by the provincial Department. Unfortunately, many of the formerly fertile and highly productive ponds of the province have disappeared, and the provincial Department is actively concerned with damming and restoring these for the enjoyment of the public.

**Nova Scotia.**—Although the Federal Government has exclusive jurisdiction over the marine and inland fisheries of Nova Scotia and attends to all phases of administration related thereto, the Nova Scotia Government operates in several fields where provincial initiative is found to be necessary and appropriate, having regard for the importance of the fishery resources in terms of employment, industry, trade and recreation.

In the commercial fisheries, provincial government interests are the concern of the Nova Scotia Department of Fisheries. The Fishermen's Loan Board is administered by that Department and the Industrial Loan Board by the Nova Scotia Department of Trade and Industry; the first makes loans to fishermen for the purchase of boats and engines and the second makes loans for the construction or improvement of fish processing plants. Fisheries engineers perform inspection and survey duties for the Loan Boards and provide technical assistance and advice to loan applicants and others in the fisheries

and allied industries, notably the boatbuilding industry. Instructors conduct courses for fishermen in the care and maintenance of marine engines, in basic navigation and in the design, construction and maintenance of gear. This program receives substantial assistance from the Technical and Vocational Training Branch of the federal Department of Manpower and Immigration. The on-course instruction is supplemented frequently by informal on-the-spot assistance to smaller groups who find themselves in need of technical help with particular problems. The Nova Scotia Department of Fisheries, with the financial and/or technical assistance of the federal Department of Fisheries, organizes and conducts explorations of fishing grounds for new resources and the adaptability of new, improved gear and methods.

*Sport Fisheries.*—In recent years, Nova Scotia, through the Wildlife Division of its Department of Lands and Forests, has spent a considerable amount of money on management and research in certain lakes and streams in the province with a view to aiding the Atlantic salmon and trout fishery. A continuing program of lake and stream investigations was begun in 1961 in order to obtain information useful in the formulation of a fish management program for the future. A system of rearing ponds, capable of producing 200,000 yearling speckled trout annually, has been established on the Medway River in Queens County and the Moser River in Halifax County. Several projects dealing with reclamation, farm ponds, rainbow trout and smallmouth bass are also being conducted. Full-time fisheries biologists are employed by the Division.

**New Brunswick.**—Commercial fishing is one of the most important basic industries of New Brunswick, employing about 5,800 fishermen with annual earnings of \$11,000,000, and 2,500 plant workers. The annual marketed value of fish products is about \$35,000,000, of which 90 p.c. is exported to the United States. New Brunswick's commercial fisheries, both tidal and inland, are under the legislative jurisdiction of the federal Department of Fisheries; angling in Crown waters is the responsibility of the provincial Department of Natural Resources.

The New Brunswick Department of Fisheries, established in 1963, has three Branches—General Administration, Boatbuilding and Maintenance, and Exploratory Fishing and Education; the Fishermen's Loan Board of New Brunswick, created in 1946, is under the jurisdiction of the Minister of Fisheries.

The General Administration Branch is responsible for personnel, accounting, field staff and administration of the New Brunswick Fish Inspection Act and Regulations; it operates three regional offices covering the three main fishing areas of the province.

The functions of the Boatbuilding and Maintenance Branch, which is staffed with marine engineers, boat inspectors and a naval architect, include the study, modification and approval of plans and specifications of fishing vessels to be financed by the Fishermen's Loan Board; the inspection of the 100 to 125 vessels of various types and sizes being built every year in the province's 15 shipyards; and the training of fishermen in the proper methods of maintaining hulls and machinery. Continuous efforts are made by the Branch to improve construction standards of inshore fishing vessels. Boats of sturdier construction and equipped with more powerful propulsion engines are enabling inshore fishermen to diversify their operations from the traditional lobster fishery. New designs are being introduced in the fleet of 128 large offshore and 3,200 small inshore fishing vessels which make up the present fishing fleet, the trend being toward larger and more automated vessels. Combination types capable of dragging for groundfish and purse seining for pelagic species are becoming more popular among the younger well-trained fishermen. The 92-foot class built in 1963 in a New Brunswick shipyard has been very successful at stern dragging for haddock and purse seining for herring, sardines and tuna. A West Coast-designed 79-foot combination trawler-seiner of hard chine construction has been added recently and a 100-foot unit of similar design is under construction. Three additional 65-foot units of wooden construction were commissioned in



1966 for fishermen of Campobello Island and northern New Brunswick. The 87-foot wooden side trawler, ten of which are in operation, has also proved very successful, particularly in the Gulf of St. Lawrence area.

The Exploratory Fishing and Education Branch continues the experimental and exploratory fishing and fish processing projects that have been carried on for many years in co-operation with the federal Department of Fisheries. Results of this extensive experimental work and research studies include the establishment of crab fisheries on the east and north coasts of the province; the establishment of a tuna fishery in the Bay of Fundy, on the shores of which a \$1,500,000 canning plant is under construction; and the introduction of Scottish and Danish seining techniques. In the search for unexploited species of fish and shellfish, in addition to cancer crabs and tunas, commercial quantities of spider crabs and shrimps were located in the deep waters of the Gulf of St. Lawrence. During 1966-67, eleven fisheries development projects were undertaken on a shared-cost basis with the federal Department of Fisheries. Among those showing the most promising results was the offshore exploration of herring in the Gulf of St. Lawrence; a West Coast seiner, chartered by the New Brunswick Department of Fisheries, caught as many as 153 tons of large fat herring in one set at the entrance to the Bay of Chaleur. The Branch operates a modern school of fisheries at Caraquet where, in 1966-67, 110 fishermen took training in the various phases of their trade. The regular program of the school includes navigation, rules of the road, motor mechanics, electronic devices, fishing gear technology, business administration, marine biology, oceanography (restricted), radio-telephone, metal and wood working, arithmetic and languages (upgrading) and other related subjects. Arrangements are being made to extend the regular course from five to nine months of the year and to conduct extension courses.

The Fishermen's Loan Board of New Brunswick is a body corporate operating under the jurisdiction of the Minister of Fisheries. Since its inception in 1946 it has granted over 1,400 loans to New Brunswick fishermen for a total of \$15,000,000; total outstanding loans stood at \$6,300,000 in 1966. Loans are repayable within five years on small inshore boats but repayment schedules on large trawlers may extend to 15 years, based on the gross proceeds of the catch. Most of the new fishing vessels being built in the province are financed by the Board, which also acts as agent for the financial assistance program granted by the federal Department of Fisheries to owners of new fishing vessels.

*Sport Fisheries.*—Sport fishing contributes substantially to the economy of the province, mainly through the tourist trade. Great Atlantic salmon rivers like the Miramichi, the Restigouche and the St. John are known around the world for their prolific production of this majestic game fish and attract many thousands of tourists to the province each year. Anglers catch as many as 50,000 salmon a year in the Miramichi system alone. Many other species are also sought after by both residents and non-residents in the hundreds of streams, rivers and lakes of the province.

*Quebec.*—The Quebec Department of Industry and Commerce administers the commercial fisheries of the province. For the benefit of producers and fishermen, it operates a network of 61 cold storage plants for the freezing and preservation of fish and the supplying of frozen bait and ice; the plants have a total daily freezing capacity of 500 tons and a storage capacity of 25,000,000 lb. The Department also owns and maintains about 110 stations in small fishing ports where fish is kept under proper conditions while awaiting collection by truck or boat, and an artificial drying plant with a processing capacity of 3,000,000 lb. of fish annually. A staff of fish wardens, technicians and technologists administers fishery legislation and assists in the application of new techniques for the expansion of the industry. The central administration is located in Quebec City with offices at the principal fishing centres. Fish inspection is carried out by federal inspectors who are given additional powers by the provincial government with respect to local sales.

Educational work among the fishermen and producers is conducted by the Department to teach the latest methods of fish preparation and of producing high-quality products. A Fisheries Training School, operated by the Department of Education at Grande Rivière, gives free theoretical and practical courses in fishery to fishermen of all ages. The Co-operative Associations of Fishermen receives encouragement through the Social Economic Service of Ste. Anne de la Pocatière subsidized by the Federal Government. Under a maritime credit system, fishermen may obtain loans from credit unions for the purchase of boats and gear. Fish consumption is promoted through advertising campaigns in newspapers and magazines, exhibits at fairs, cooking demonstrations, educational films and the free distribution of fish recipes and publicity leaflets.

The Department adheres to the federal-provincial agreement on the building of draggers and longliners and assumes the building costs on a capital refunding plan. As at Mar. 31, 1965, the fishing fleet consisted of two 129-foot steel draggers, 12 82-foot steel draggers, 84 wooden draggers, 49 longliners and one boat equipped for clam dragging. The cost of construction of fishing boats since 1952 has been about \$13,000,000 and loans to fishermen have exceeded \$8,000,000.

Biological and hydrographical research is conducted in the Gulf of St. Lawrence, directed by the Marine Biological Station at Grande Rivière, and studies of the biology of freshwater fish of the St. Lawrence River and its tributaries are undertaken at a laboratory located in Quebec City. An aquarium in Quebec City exhibits freshwater and saltwater fish in 60 large tanks.

*Sport Fisheries.*—The Department of Tourism, Fish and Game has jurisdiction over sport fishing in inland waters; it employs 250 full-time wardens. Licences are required for sport fishing and hunting. Four hatcheries are maintained at strategic points throughout the province for the distribution in public waters of speckled trout, brown trout, rainbow trout and grey trout, splake, ouananiche, maskinonge and salmon.

Excellent fishing may be found in all provincial parks and reserves, except Mont Orford Park. Gaspesian and Laurentide Parks are renowned for their trout fishing. Chibougamau Reserve and La Vérendrye Park, situated on the height of land, are eminently suited to canoe trips in search of pickerel, pike and grey or speckled trout. Five salmon streams are open to anglers—the St. Jean River, the Petite Cascapédia River, the Matane River, the Port Daniel River and the Matapédia River. A joint committee composed of departmental officials and the directors of the federation of fish and game associations recommends the proper legislation for the maintenance of satisfactory fishing and hunting conditions and other problems arising out of the ever-changing conditions of modern life and their effect on the wildlife of the province.

**Ontario.**—The fishery resources of Ontario are administered by the Fish and Wildlife Branch, Department of Lands and Forests, under the authority of the federal Fisheries Act, the Fishery Regulations for the Province of Ontario, the Ontario Game and Fish Act and the Regulations connected therewith.

*Commercial Fisheries.*—The commercial fishing industry in Ontario provides employment for about 3,000 persons directly and for many more indirectly, and produces an annual yield of from 45,000,000 lb. to 55,000,000 lb. of fish. The industry, although widely scattered throughout the province, is centred chiefly on the Great Lakes, particularly Lake Erie. The principal species of fish taken commercially are perch, smelt, whitefish, pickerel, lake trout, white bass, pike, herring, chub, sheepshead, carp, catfish and bullheads, sturgeon, eels, goldeyes, rock bass, sunfish and suckers. Over one hundred smaller inland lakes are commercially fished, principally those in the northwestern portion of the province, and careful management of these lakes is essential to ensure continued production.

The types of fishing boats in use vary from small craft to 60-foot tugs, and types of gear vary from gillnets, pound-nets and trap-nets, seines and baited hooks to small hand-

operated seines and dip-nets. Fishing methods and equipment have been modernized extensively during the past few years. Diesel-driven steel-hull tugs have replaced steam-driven wooden tugs, such aids as depth-sounding devices, radar, ship-to-shore and ship-to-ship communications have been developed and a better knowledge of the fish and their movements has been established from biological research findings. Modern icing facilities and transportation methods are in use as well as new types of fishing gear. Trawling has proved very efficient in harvesting smelt on a year-round basis in Lake Erie.

Most Ontario fishermen are organized into various local associations. Many of these associations are, in turn, represented by the Ontario Council of Commercial Fisheries which performs important services to the industry. The Ontario Fishermen's Co-operative and its member groups are of interest also in the organization of the fishery in the province.

*Sport Fisheries.*—Angling in Ontario is rapidly becoming one of the major industries of the province. With an estimated freshwater area of some 68,490 sq. miles, the province is one of the most attractive fishing areas on the Continent. Excellent angling opportunities are available for such prized fish as brook, rainbow, lake and brown trout, walleye, smallmouth and largemouth bass, pike and maskinonge. It is difficult to measure the total value of the sport fishing industry to the province but the annual revenue from the sale of angling licences alone (mainly to non-residents, as residents require a licence for provincial parks only) is in the neighbourhood of \$2,500,000. The management of this valuable resource is administered by a well-trained field staff of conservation officers and biologists located in the 22 forest districts of the province.

*Provincial Hatcheries.*—Ontario operates 17 hatcheries and rearing stations and excellent results have been produced in the culture and distribution of various species of game fish. The primary species reared in these operations include brook trout, rainbow trout, lake trout, smallmouth and largemouth bass, and maskinonge. Four of the finest trout-rearing stations on the Continent are located in this province—at Dorion near Port Arthur, Sault Ste. Marie, Hill Lake near Englehart, and Chatsworth.

*Fisheries Research.*—Research in Ontario is carried on in the Great Lakes and in inland waters. At the South Bay Mouth Station on Manitoulin Island in Lake Huron, Wheatley on Lake Erie, and Glenora on the Bay of Quinte on Lake Ontario, fishery biological stations are operated for the investigation and study of the commercial and sport fisheries on the respective lakes. In Algonquin Park, detailed studies concerning lake trout, smallmouth bass and brook trout are in progress and management techniques are being tested against the background of a creel census which has been continuous since 1936. Studies are also being conducted on walleye, parasitology and limnology. A selective breeding experiment concerning the hybrid between lake trout and brook trout is progressing; the deep-swimming character of the lake trout and the character of maturity at early age of the brook trout are those being selected for combination in the hybrid. Co-operation by Ontario in the field of sea lamprey control is being extended through the Great Lakes Fishery Commission.

*Manitoba.*—Commercial fishing has been carried on in Manitoba since 1880. The province has almost 40,000 sq. miles of freshwater and 400 miles of coastline on Hudson Bay but, altogether, about 300 lakes and rivers, covering 30,000 sq. miles, are commercially fished. Some 3,500 persons are employed in primary commercial fishing and an equal number derive part of their living from fish processing and the supply of materials and services to the industry. The industry is particularly important to people living in remote northern communities where fishing provides a major part of their cash income but, even



so, over two thirds of the catch is taken in the southern part of the province. In 1964-65, Lake Winnipeg produced 9,706,200 lb., Lake Manitoba 5,196,800 lb., Lake Winnipegosis 3,562,200 lb., and other southern lakes 387,500 lb. The northern lakes produced 9,780,000 lb. The total value to the fishermen in 1964-65 was \$3,719,566 and the value as marketed was \$6,408,116. The average marketed catch for the past five years was 32,600,000 lb., worth \$3,900,000 to the fishermen and \$7,000,000 at the wholesale level after processing. About half the catch is taken during open water and the remainder through the ice in winter.

There are 15 kinds of fish caught commercially in Manitoba but those of highest annual value to the fishermen are pickerel, whitefish, sauger and pike. Over 90 p.c. of the catch is exported, mostly to the United States. A quantity of the less valuable kinds and some processing waste are used as food on mink ranches and for the making of meal; a small industry to process white whales (beluga) for oil and animal food has been established on Hudson Bay. Capital investment in gear, boats, warehouses, etc., approaches \$5,000,000.

Supervision of commercial fishing operations and the enforcement of the Manitoba Fishery Regulations occupy a staff of Conservation Officers who patrol the province using diesel boats during the open water season, snowmobiles and light trucks during the winter and aircraft in remote areas. The Fisheries Branch of the Department of Mines and Natural Resources, in co-operation with the Department of Health, conducts a systematic program of plant inspection to raise the standard of sanitation and improve the processed product.

A continuing program of biological research is conducted by the Fisheries Branch to provide management information in the interest of a sustained annual yield and a program has been established to test and prove new improved netting and gear which will increase production and lower operating costs. Close liaison is maintained with the federal Department of Fisheries and the Fisheries Research Board in the effort to develop new fish products and effect more complete utilization of the province's fishery resources.

Fish culture activities include two pickerel hatcheries (Lake Manitoba and Lake Winnipegosis), a whitefish hatchery (Lake Winnipeg), a trout hatchery (Whiteshell Provincial Park) and two spawn-taking camps. Fish to replenish the commercial fishing waters are raised in the pickerel and whitefish hatcheries and several kinds of trout as well as splake and sockeye salmon are raised in the Whiteshell hatchery to be planted in sport fishing waters.

*Sport Fisheries.*—Angling continues to be one of the most popular and most rapidly growing forms of outdoor recreation in Manitoba, and since ice-fishing has come into vogue many anglers are now fishing over the entire year. About 100,000 licensed fishermen, 15,000 of them from outside the province, spent an estimated \$11,000,000 in pursuit of this sport. Although their catch of about 5,000,000 lb. a year is considerably less than the commercial fishing yield, the monetary value to the province of the sport fisheries is higher. Extensive water areas are reserved for sport fishing only but others are managed for both types of use. Walleye (pickerel), northern pike and the various trout species are the main species taken. Either or both of the first two species occur in nearly every body of water in the province but trout require a more specialized habitat and occur only in select lakes and rivers.

**Saskatchewan.**—Approximately 32,000 sq. miles of water, about one eighth of the province's area, provide the basis for Saskatchewan's fishery resource, a resource that contributes much to the economic and recreational activity of the province. Administration of the fisheries is the responsibility of the Fisheries Branch of the Department of Natural Resources; its head office is located in Prince Albert. The Branch has three

main Divisions—Management, Research and Fish Culture—which are responsible for planning policies; developing programs to ensure the proper management and utilization of the fishery resource; interpreting and explaining policies, programs and regulations; administering the Acts and Regulations (both federal and provincial); and adapting regulations to meet changing conditions. Its objective is to encourage efficient multi-use of the fishery, taking into consideration the interests of the various groups concerned—commercial fishermen, mink ranchers, anglers and the public generally.

The commercial fishery in Saskatchewan averages about 14,500,000 lb. annually and consists mainly of whitefish, lake trout and walleye. In 1964 the total catch of 14,306,000 lb. had a market value of \$3,080,000, of which \$1,490,000 was received by the fishermen. This was a slight increase over the previous year, the result of a better harvest of northern pike and tullibee. Eighteen local fishermen co-operatives, representing 1,350 fishermen, marketed 66 p.c. of the total harvest in 1964.

During the year, 324 free Indian permits and 896 domestic fishing licences were issued, resulting in a catch of about 1,200,000 lb. of fish of all species; the 62 mink ranchers licensed to fish for 9,888 breeders produced an estimated 5,800,000 lb. of rough fish (suckers, burbot and ciscoes).

The Fish Research Division conducts biological surveys on most of the large lakes and on many smaller water bodies and streams in the province to provide information for the development of fisheries management policies and programs. The current program is designed to: determine productivity of water bodies; secure information on abundance and relationship of fish species; investigate ecology and assess factors affecting environment of fish; develop techniques to achieve maximum harvest of fish populations without prejudice to continued production; and develop techniques to facilitate rehabilitation and stocking of small water bodies. Continuing limnological and fisheries surveys are conducted on lakes along the Lac la Ronge highway; along highway 106; on the Saskatchewan River Delta; and on Jackfish, Murray, Green and Turtle Lakes. A long-term creel census is being taken on Lac la Ronge and studies have been conducted to test survival of young northern pike.

Spawn camps are operated in northern Saskatchewan to collect lake trout, whitefish, northern pike, walleye and arctic grayling eggs. These, along with rainbow and eastern brook trout eggs received from the United States and alpine char from France, have been incubated and hatched at the Fish Culture Station at Fort Qu'Appelle. Millions of fry are stocked in many water bodies in the province.

*Sport Fishing.*—Saskatchewan has some of the finest sport fishing waters in Canada, about 100,000 angling licences being issued annually. To meet recreational demands, a study of 84 water bodies was undertaken recently and seven small lakes along the Churchill River road have been rehabilitated. The survival of kokanee (land-locked salmon) in a rehabilitated lake marked the first successful stocking of this species in provincial history. A new Saskatchewan Anglers' Derby record was set in the goldeye division by a 3-lb.2-oz. specimen taken in the Saskatchewan River. Other top prizes went to anglers for a 33-lb. 9-oz. northern pike, a 12-lb. 3-oz. walleye, a 3-lb. 12.5-oz. brook trout, and a 3-lb. 9.5-oz. arctic grayling.

**Alberta.**—Commercial and sport fishing is administered by the Fish and Wildlife Division of the Department of Lands and Forests under the authority of the Fisheries Act (Canada) and the Fishery Act (Alberta). Production of commercial fish for the year ended Mar. 31, 1965 was 12,296,600 lb., with a landed value of \$791,044 and a marketed

value of \$1,243,481. Lake whitefish, the most valuable of commercially caught fish, accounted for 38 p.c. of the total marketed value but represented only 12 p.c. of the total landings. Tullibee, a low-priced fish used primarily for animal food, accounted for 71 p.c. of the total quantity and 43 p.c. of the marketed value. Other species taken in order of marketed value were pickerel (walleye), pike, perch, burbot (ling) and lake trout. Of the total quantity taken, 1,365,664 lb. were marketed outside the province and of that amount 1,272,300 lb. were exported to the United States.

*Sport Fisheries.*—Angling licence sales number about 125,000 each year. The province operated fish culture facilities for stocking angling waters at Calgary and Raven where 1,913,980 trout, grayling and kokanee (land-locked salmon) were produced in 1965. Trout plantings are made in lakes and reservoirs but warm water stockings are limited to the transfer of adult walleye, pike and perch to a few selected lakes for the purpose of introducing these species.

A staff of four district biologists, two assistant biologists and several student employees carried out biological surveys and management projects during 1965. For the first time, surveys were extended to lakes on the Canadian shield in extreme northeastern Alberta, an area offering considerable potential for sport fishing for lake trout. Reclamation of lakes by chemical treatment and habitat destruction problems also received attention.

**British Columbia.**—A Fisheries Office, which was organized in 1901-02 and became very active in fish culture work, building and operating fish hatcheries and instituting scientific research into various fishery problems, was superseded in 1947 by the Department of Fisheries which in turn was superseded in 1957 by the Department of Recreation and Conservation. Commercial fisheries are represented today as the Commercial Fisheries Branch of the Department of Recreation and Conservation. Broadly speaking, the administrative and regulative jurisdiction over the fisheries of British Columbia rests with the federal authority. The ownership of the fisheries in the non-tidal waters is vested in the Crown in the right of the province, as are the shell fisheries such as oyster fishing and clam fishing in tidal waters. The province administers these fisheries although the regulations covering them are made under federal Order in Council on the advice and recommendation of the province.

The provincial Fisheries Act provides for the taxation of the fisheries and, under civil and property rights, for the regulation and control of the various fish processing plants under a system of licensing. Provision is also made for arbitration of disputes regarding fish prices that may arise between the fishermen and operators of the various licensed plants. The administration of the Act involves the collection of revenue and the supervision of plant operations.

Regulation and administration of net fishing in the non-tidal waters of the province, including commercial fishing and authority for regulation of the game fisheries in non-tidal waters, is vested in the Fish and Game Branch which operates a number of trout hatcheries and egg-taking stations for re-stocking purposes.

The Branch co-operates closely with the Fisheries Research Board of Canada. The biological research into those species of shellfish over which the province has control, principally oysters and clams as well as marine plants, is conducted by the Fisheries Research Board of Canada at the Pacific Biological Station, Nanaimo, B.C., under agreement with the federal and provincial authorities. The object of this research is to encourage the industry to produce better products more economically and to enable the Commercial Fisheries Branch to regulate the various species so that maximum exploitation may be obtained on a sustained-yield basis.



## PART II.—FURS

### Section 1.—The Fur Industry\*

Although the relative importance of the fur industry in the Canadian economy has declined through the years, the production of wild and farm furs continues to contribute substantially to the national income and to individual income in certain areas. In addition to returns from the sale of pelts, the thriving fur farming industry has boosted the economy of many areas through creation of a chain of associated businesses such as feed supply houses and pelt processing stations. Demand from the industry for feed stuffs has resulted in the utilization of much of what was formerly waste from meat packing operations and poultry processing plants. In addition, some 50,000,000 lb. of rough fish and fish frames, formerly of little or no value, are used annually by this industry.

The value of raw furs produced in Canada in the 1964-65 season amounted to \$36,613,350, ranched furs accounting for 58.4 p.c. and wild pelts for the remainder. Canada accounts for about one twelfth of the world production of ranched mink pelts and one quarter of the world production of wild furs. A large proportion of the Canadian fur crop is exported, the principal varieties being mink, beaver, seal, muskrat and fox; in 1965 the value of raw furs exported was \$29,503,777 and during the same year raw furs worth \$19,144,817 were imported.

**Fur Trapping.**—The value of the wild furs caught in 1964-65 was \$15,236,798. In that season Canadian trappers took 4,163,277 pelts of all species, ranging from 564 polar bear skins which realized an average price of \$99.12, to 1,503,756 squirrel pelts averaging \$0.59. An estimated 50,000 Canadians participate annually in fur trapping activities which in recent seasons have yielded an average revenue of approximately \$15,000,000 including the value of the sealskin crop. Returns from the trapping enterprise are distributed through countless northern villages, providing a welcome source of revenue for many part-time trappers as well as for the professionals.

A good proportion of the wild fur catch comes from the central and southern portions of the provinces. Some species have adjusted to life in partly settled areas and each year substantial catches of beaver, muskrat, mink, raccoon, wolf and squirrel are made in areas of mixed farm and bushland. As a result of the failure of raw fur prices to keep pace with rising commodity costs, most of the trappers in these areas operate on a part-time basis only. Many are full-time wage-earners who carry on their trapping activities during weekends or on holidays.

In the northern areas also, the production of most of the important fur varieties is being well maintained. Comparatively few opportunities for wage employment exist in these areas and trapping remains an important source of revenue. Since 1938 no trapping licences have been issued to non-Indians in the Northwest Territories, other than to individuals holding licences at that date and their offspring. Consequently, most of the fur catch in the Northwest Territories is taken by Indian, metis and Eskimo trappers. A trend has developed in recent years whereby native trappers, who formerly spent the winter months along with their families on the trapline, now congregate with their dependants in the settlements. This community-type living has certain undesirable results; the areas around the settlements tend to be over-trapped and the less accessible areas neglected, with consequent waste of the fur resource.

**Fur Farming.**—Mink is by far the most important fur bearer raised on fur farms; chinchilla, fox and nutria are also raised but these account for less than 1 p.c. of the total value of pelts produced.

\* Prepared by A. Stewart, Production and Marketing Branch, Canada Department of Agriculture, Ottawa.

Mink farming, which had its beginnings in Canada around 1910, is now carried on in all provinces, the principal producers, in order of importance, being Ontario, British Columbia, Manitoba and Alberta. The following figures indicate the growth of the industry since 1930:—

Year	Pelt Production	Average Realization	Year	Pelt Production	Average Realization
	No.	\$		No.	\$
1930.....	3,284	10.52	1960.....	1,203,853	14.03
1935.....	30,558	10.58	1961.....	1,271,449	14.50
1940.....	229,202	9.64	1962.....	1,295,672	15.13
1945.....	255,968	21.51	1963.....	1,400,021	15.82
1950.....	589,352	17.08	1964.....	1,418,368	14.92
1955.....	786,760	20.07			

Production in 1964 was 1.3 p.c. higher than in the previous year but, because of poorer market conditions, the value was down 4.4 p.c.

The mink breeding season extends from early March to early April. After a gestation period varying from 40 to 70 days, the litter of three to six kits is born. At age five to six months, the mink are fully grown and at this stage receive all possible attention with a view to developing deep, silky pelts which will bring top prices. Pelting starts around mid-November and by the end of that month shipments of raw pelts begin arriving at the fur auction houses. Mink farming has become a specialized business that calls for a high degree of skill, experience and industry. The successful breeder must have a thorough knowledge of his animals' habits and requirements. Mink must be fed a carefully prepared diet, tailored to meet the varying demands of the breeding, growing and furring-out seasons. Also, a sound understanding of the complex field of genetics is required for selective breeding programs through which breeding herds may be improved and new colours produced. Diseases of mink have been the subject of considerable research, as a result of which most mink farmers now carry out programs of preventive vaccination for control of the major diseases.

Advanced ranching practices and the use of labour-saving devices enable the producer to operate very efficiently, permitting a single operator to tend many animals. Mink are usually housed in roofed structures with more or less open sides. These sheds may contain up to several thousand animals each and the regular pattern of the pens within the structure facilitates the use of automatic watering and powered feeding systems. Even so, production costs in the 1960-64 period showed considerable increase and mink pelt prices failed to keep pace. One result of the lower profit margins has been an acceleration of the trend toward large producing units and the decline in the numbers of small operators producing fewer than 100 pelts a year. In 1950 there were 589,352 mink pelts produced on 2,557 farms, an average of 230 pelts per unit; in 1960 there were 1,203,853 mink pelts produced on 2,331 farms, an average of 516 per unit; and by 1964 the number of mink farms had declined to 1,491 but pelt production increased to 1,418,368, an average of 951 per farm.

Chinchillas are being raised successfully in all provinces, the principal producers in 1964, in order of importance, being British Columbia, Ontario, Quebec and Alberta. Most of the Canadian chinchilla pelts are exported in the raw state to the United States where they are dressed before being offered for sale. The pelts are sold through two outlets in New York City and most of the Canadian skins are intersorted with pelts produced in the United States. This arrangement benefits producers in both countries since the resulting larger quantities render it possible for the grading specialists to make up "lots"

containing pelts well matched as to size, colour and quality. The following figures show the production of chinchilla pelts in Canada since 1955:—

<i>Year</i>	<i>Pelt Production</i>	<i>Average Realization</i>	<i>Year</i>	<i>Pelt Production</i>	<i>Average Realization</i>
	<i>No.</i>	<i>\$</i>		<i>No.</i>	<i>\$</i>
1955.....	1,742	27.50	1960.....	9,067	13.06
1956.....	2,705	9.65	1961.....	10,559	14.07
1957.....	4,701	13.84	1962.....	11,193	13.56
1958.....	8,336	13.43	1963.....	12,226	14.03
1959.....	8,558	13.17	1964.....	12,842	13.22

In 1964, 782 fox pelts were produced on 36 Canadian farms, a continuation of the decline that began following the peak production of 240,827 pelts in 1939. It is interesting to note, however, that, sparked by a strong demand from Japan, the 1964 production realized an average price of \$43.37 per pelt, the highest return since 1930.

**Fur Marketing.**—The bulk of the Canadian fur crop is sold in one or other of the eight fur auction houses located in Montreal, North Bay, Winnipeg, Regina, Edmonton and Vancouver. The marketing season extends from December each year through to the following June. By this time most of the current season's production has been moved at the auction level, although clean-up sales in August or September are not unusual.

The December auctions offer substantial quantities of the new season's ranched mink pelts but only limited quantities of wild furs; the latter become available in larger quantities in January and later months. Canadian pelts are traditionally sold in the raw or unprocessed state, thus facilitating entry into the many countries that maintain tariffs on imports of processed furs.

Throughout the 1965-66 selling season, there was a strong American and European demand for all types of Canadian furs, especially from West Germany. In addition to the demand for ranched mink, the dominant fur of the industry, there was a noticeable interest shown in many of the wild fur varieties including the long-haired types which have largely been neglected in recent years. As a result, prices realized at auction for both wild and ranch-raised pelts were higher than in 1964-65.

Most Canadian mink ranchers are members of the Canada Mink Breeders' Association, which promotes Canadian ranch-raised mink in the domestic and foreign markets and works closely with fur auction outlets in formulating plans for marketing the annual pelt crop. Funds for advertising and other expenditures are obtained through a (voluntary) deduction of 1½ p.c. of the sales price of all members' pelts sold at auction. In the 1964-65 season these deductions produced a revenue of approximately \$290,000.

One method of promoting Canadian furs in the overseas market is the annual exhibit of a comprehensive selection of this country's furs at the International Fur Fair, Frankfurt, West Germany. This is the largest and most important exhibition of its type in the world and the annual attendance of around 20,000, mainly members of the European fur industry, includes a good proportion of the overseas purchasing power. An indication of the success of this exhibition, sponsored by the Department of Trade and Commerce, is the recent increase in the number of fur buyers who have come to Canada to obtain their requirements. Mink producers and trappers alike have benefited through the additional competition produced in Canadian auctions by these visitors.

## Section 2.—Fur Statistics

### Subsection 1.—Fur Production and Trade\*

**Total Fur Production.**—Early records of raw fur production were confined to the decennial censuses when account was taken of the number and value of pelts obtained by trappers. In 1920 the Dominion Bureau of Statistics commenced an annual survey of

\* Prepared by the Agriculture Division, Dominion Bureau of Statistics.



raw fur production. For a number of years the statistics were based on information supplied by the licensed fur trappers. More recently, annual statements based on royalties, export tax, etc., have been made available by the provincial game departments (except Prince Edward Island), and these statements are used in the preparation of the statistics issued annually by the Bureau. Figures for Prince Edward Island are based on returns supplied to the Dominion Bureau of Statistics by fur dealers in that province.

**1.—Pelts of Fur Bearing Animals Produced and Percentage Sold from Fur Farms, Years Ended June 30, 1946-65**

Year Ended June 30—	Pelts		Percentage of Value Sold from Fur Farms	Year Ended June 30—	Pelts		Percentage of Value Sold from Fur Farms
	Number	Value			Number	Value	
		\$				\$	
1946.....	7,593,416	43,870,541	30	1956.....	7,727,264	28,051,746	56
1947.....	7,486,914	26,349,997	37	1957.....	6,919,724	25,592,130	57
1948.....	7,952,146	32,232,992	37	1958.....	6,440,319	26,335,109	60
1949.....	9,902,790	22,899,882	33	1959.....	5,370,531	25,800,555	62
1950.....	7,377,491	23,184,033	34	1960.....	5,999,414	31,186,078	60
1951.....	7,479,272	31,134,400	36	1961.....	6,237,360	28,737,087	59
1952.....	7,931,742	24,215,061	42	1962.....	5,771,129	28,971,077	64
1953.....	7,568,865	23,349,680	43	1963.....	5,123,395	31,943,418	62
1954.....	6,274,727	19,287,522	49	1964.....	4,829,717	39,493,233	57
1955.....	9,670,796	30,509,515	43	1965 <sup>2</sup> .....	5,599,070	36,613,350	58

<sup>1</sup> Includes 257,123 seal pelts valued at \$4,080,411; figures not available for previous years.

253,469 seal pelts valued at \$3,517,640.

<sup>2</sup> Includes

Ontario continues to lead the provinces in value of fur production, accounting for 24 p.c. of the total in the 1964-65 season. British Columbia followed with 15 p.c., Manitoba with 13 p.c., Alberta 13 p.c., Quebec 11 p.c., Saskatchewan 6 p.c., the Atlantic Provinces 6 p.c., and the Yukon and Northwest Territories 5 p.c.

**2.—Pelts of Fur Bearing Animals Produced, by Province, Years Ended June 30, 1964 and 1965**

Province or Territory	1964 <sup>1</sup>			1965		
	Pelts	Value	Percentage of Total Value	Pelts	Value	Percentage of Total Value
	No.	\$		No.	\$	
Newfoundland.....	49,662	621,761	1.6	50,217	531,641	1.5
Prince Edward Island.....	2,956	46,086	0.1	3,491	52,112	0.1
Nova Scotia.....	104,144	1,378,014	3.5	126,086	1,328,085	3.6
New Brunswick.....	46,006	244,602	0.6	49,619	341,132	0.9
Quebec.....	452,646	3,887,168	9.8	450,911	3,847,452	10.5
Ontario.....	1,197,266	10,844,157	27.5	1,029,738	8,938,984	24.4
Manitoba.....	623,846	4,855,282	12.3	736,282	4,789,902	13.1
Saskatchewan.....	460,803	2,271,089	5.8	659,063	2,312,198	6.3
Alberta.....	898,088	4,843,872	12.3	1,395,936	4,705,666	12.9
British Columbia.....	453,347	5,403,703	13.7	566,027	5,654,587	15.4
Yukon Territory.....	86,394	171,209	0.4	70,995	172,936	0.5
Northwest Territories.....	265,656	1,854,764	4.7	299,653	1,535,926	4.2
<b>Canada<sup>1</sup>.....</b>	<b>4,829,717</b>	<b>39,493,233</b>	<b>...</b>	<b>5,599,070</b>	<b>36,613,350</b>	<b>...</b>

<sup>1</sup> Totals include pelts and their values not allocated to a province or territory, mainly Alaska fur seal and Atlantic Coast hair seal.

**Wild Fur Production.**—The principal kinds of wild fur pelts taken, according to their value in 1964-65, were beaver, seal, muskrat, mink, squirrel, otter, white fox, lynx, and marten. These nine kinds of pelts accounted for 94.8 p.c. of the total value of wild pelts produced.

**3.—Pelts of Wildlife Fur Bearing Animals Taken, by Kind, Years Ended  
June 30, 1964 and 1965**

Kind	1964			1965		
	Pelts	Total Value	Average Value	Pelts	Total Value	Average Value
	No.	\$	\$	No.	\$	\$
Badger.....	409	1,175	2.87	395	1,099	2.78
Bear—						
White.....	482	33,082	68.63	564	55,906	99.12
Black or brown.....	683	9,976	14.61	1,211	21,082	17.41
Grizzly.....	19	285	15.00	22	330	15.00
Beaver.....	463,837	6,181,030	13.33	415,261	4,905,277	11.81
Coyote or prairie wolf.....	19,366	118,990	6.14	22,566	150,113	6.65
Ermine (weasel).....	124,079	99,701	0.80	180,259	222,999	1.24
Fisher.....	8,364	92,252	11.03	7,950	70,713	8.89
Fox—						
Blue.....	171	1,061	6.20	207	1,499	7.24
Cross and red.....	19,214	83,761	4.36	22,010	130,278	5.92
Silver.....	293	1,695	5.78	472	5,052	10.70
White.....	32,447	489,067	15.07	40,831	448,112	10.97
Not specified.....	2	7	3.50	71	455	6.41
Lynx.....	36,197	529,674	14.63	24,534	408,420	16.65
Marten.....	49,664	439,033	8.84	40,948	369,191	9.02
Mink.....	121,459	1,971,186	16.23	106,863	1,530,648	14.32
Muskrat.....	1,433,057	1,962,381	1.37	1,387,022	1,832,288	1.32
Otter.....	19,802	547,286	27.64	19,315	556,507	28.81
Rabbit.....	143,873	53,393	0.37	105,790	33,967	0.32
Raccoon.....	25,975	49,611	1.91	25,785	59,014	2.29
Seal—						
Fur, North Pacific <sup>1</sup> .....	10,906	585,651	53.70	13,462	762,922	56.67
Hair, N.W.T.....	46,962	691,764	14.73	68,332	757,017	11.08
Hair, Que.....	21,342	317,996	14.90	24,141	359,701	14.90
Hair, Atlantic Coast <sup>2</sup> .....	177,913	2,485,000	13.97	147,534	1,638,000	11.10
Skunk.....	374	159	0.43	1,039	555	0.53
Squirrel.....	653,175	379,525	0.58	1,503,756	882,290	0.59
Wildcat.....	1,133	4,675	4.13	1,553	10,288	6.62
Wolf.....	1,474	24,067	16.33	866	14,315	16.53
Wolverine.....	479	6,401	13.36	518	8,760	16.91
<b>Totals.....</b>	<b>3,413,151</b>	<b>17,159,884</b>	<b>...</b>	<b>4,163,277</b>	<b>15,236,798</b>	<b>...</b>

<sup>1</sup> Commonly known as Alaska fur seal; not available by province. Value figures are the net returns to the Federal Government for pelts sold. <sup>2</sup> Value figures are payments to sealers for landed pelts, including blubber; an unknown quantity is processed as leather.

**Fur Farm Production.**—Mink now accounts for over 99 p.c. of the total value of fur farm production. In 1964 the number of mink pelts taken continued upward, reaching 1,418,368 with a value of \$21,165,324. The total number of all types of pelts taken was 1,435,803 with a value of \$21,376,685.

On the whole, there was little change in the number of fur farms operating in 1964 compared with 1963, some provinces reporting small increases and others small decreases.

Mink farms increased in number from 1,476 to 1,491 and the number of animals on those farms at year-end from 583,312 to 641,818. Chinchilla farms also increased in number from 451 to 477 and the number of animals increased from 39,656 to 49,298. In 1964, 151 farms raising nutria reported 3,986 animals and 36 farms raising fox had 762 animals; the number of nutria decreased by 2,734 over 1963 and the number of fox increased by 4.

## 4.—Fur Farms and Value of Pelts Produced Thereon, by Province, 1963 and 1964

Province	Fur Farms at Year End		Value of Pelts Produced on Fur Farms	
	1963	1964	1963	1964
	No.	No.	\$	\$
Newfoundland.....	38	32	556,053	444,959
Prince Edward Island.....	13	10	45,525	51,395
Nova Scotia.....	121	138	1,246,474	1,157,712
New Brunswick.....	33	35	86,009	87,443
Quebec.....	142	135	1,488,561	1,373,614
Ontario.....	816	758	6,897,218	6,056,649
Manitoba.....	199	185	3,118,619	3,114,571
Saskatchewan.....	135	132	1,243,565	1,393,374
Alberta.....	257	302	3,010,309	2,818,780
British Columbia.....	402	404	4,640,141	4,876,248
<b>Totals.....</b>	<b>2,156</b>	<b>2,131</b>	<b>22,333,595<sup>1</sup></b>	<b>21,376,685<sup>1</sup></b>

<sup>1</sup> Includes value of some pelts not allocated by province.

## 5.—Number and Value of Pelts Produced on Fur Farms, by Kind, 1963 and 1964

Kind	1963		1964	
	Pelts	Value	Pelts	Value
	No.	\$	No.	\$
<b>Mink.....</b>	<b>1,400,021</b>	<b>22,142,286</b>	<b>1,418,368</b>	<b>21,165,324</b>
Standard.....	264,668	5,417,755	359,616	5,257,586
Grey.....	49,466	606,948	38,584	520,499
Dark blue.....	77,280	1,113,606	61,721	998,029
Light blue.....	278,043	4,087,234	254,242	4,291,606
Brown.....	464,260	7,233,171	484,721	6,810,329
Beige.....	205,469	2,917,659	170,830	2,601,741
White.....	60,835	765,913	48,654	685,534
<b>Chinchilla.....</b>	<b>12,226</b>	<b>171,560</b>	<b>12,842</b>	<b>169,711</b>
<b>Fox.....</b>	<b>830</b>	<b>12,525</b>	<b>782</b>	<b>33,915</b>
Blue.....	55	830	24	1,041
Platinum.....	320	4,829	413	17,912
Silver.....	409	6,172	319	13,835
Other.....	46	694	26	1,127
<b>Nutra.....</b>	<b>3,459</b>	<b>6,978</b>	<b>3,801</b>	<b>7,602</b>
<b>Totals<sup>1</sup>.....</b>	<b>1,416,611</b>	<b>22,333,595</b>	<b>1,435,803</b>	<b>21,376,685</b>

<sup>1</sup> Includes pelts not allocated by type.

**Exports and Imports.**—The Canadian fur trade, both export and import, is mostly in undressed furs, the value of dressed and manufactured furs going out of or coming into Canada being a comparatively small proportion of the total. Canadian fur exports consist largely of those produced in greatest abundance, mink being by far the most valuable followed by beaver, seal, muskrat, fox, and squirrel. Mink, Persian lamb, dressed seal, fox, muskrat and raccoon make up a large part of the imports. Exports and imports of furs, undressed, dressed and manufactured, to and from Britain, the United States and all countries, are given for the years 1964 and 1965 in Table 6.



## 6.—Exports and Imports of Furs, by Kind, 1964 and 1965

Kind of Fur	1964			1965		
	Britain	United States	All Countries	Britain	United States	All Countries
Exports						
	\$	\$	\$	\$	\$	\$
Undressed—						
Beaver.....	1,165,024	2,366,978	5,218,665	743,845	2,289,683	3,937,440
Chinchilla.....	360	231,262	248,957	—	202,417	202,417
Ermine or weasel.....	158,020	14,736	182,474	202,515	70,859	273,577
Fisher.....	54,774	44,909	119,883	29,981	52,047	94,129
Fox, all types.....	9,058	586,018	686,273	37,629	1,038,143	1,305,498
Lynx.....	213,676	212,096	458,653	217,638	320,147	556,112
Marten.....	123,415	382,910	521,996	94,753	209,018	311,312
Mink.....	2,027,316	12,501,003	17,560,350	1,641,890	12,753,214	18,247,169
Muskrat.....	1,289,355	47,009	1,464,308	1,512,046	149,066	1,792,613
Otter.....	22,141	74,970	162,777	7,544	104,084	232,473
Rabbit.....	1,225	32,577	55,596	—	61,815	101,622
Raccoon.....	5,942	30,688	37,702	1	1	1
Seal.....	1,739,643	134,963	2,766,298	1,326,158	158,356	2,058,128
Squirrel.....	539,410	2,372	543,209	804,243	877	804,715
Wolf.....	16,201	127,151	143,352	11,485	108,368	124,399
Other.....	48,843	74,717	157,106	56,198	151,105	263,415
Dressed—						
Mink.....	32,826	48,717	444,970	4,375	79,821	327,456
Raccoon.....	—	615,179	615,179	—	1,038,897	1,046,931
Fur plates, mats, etc.....	850	24,173	45,738	2,220	4,704	21,917
Other.....	169,649	1,265,325	2,378,032	86,423	1,582,752	2,442,152
Fur goods apparel.....	2,182,022	669,436	6,227,931	1,282,337	747,250	6,053,199
<b>Totals.....</b>	<b>9,799,730</b>	<b>19,497,189</b>	<b>40,039,449</b>	<b>8,061,280</b>	<b>21,122,123</b>	<b>40,196,974</b>
Imports						
	\$	\$	\$	\$	\$	\$
Undressed—						
China and Jap mink.....	—	2,767	244,085	14,643	1,807	241,730
Fox.....	541,411	284,229	1,202,954	1,117,800	512,858	2,454,128
Kolinsky.....	19,598	14,500	167,716	90,997	10,995	320,105
Mink.....	1,553,141	3,088,728	8,788,275	1,259,566	3,505,473	8,988,104
Muskrat.....	—	811,412	811,412	—	842,729	851,247
Persian lamb.....	862,001	1,968,927	5,356,324	542,049	1,447,211	4,048,973
Rabbit.....	—	153,956	207,399	—	150,291	199,765
Raccoon.....	—	785,798	785,798	—	1,528,545	1,538,679
Squirrel.....	29,354	4,883	53,818	9,801	845	70,984
Other.....	181,528	1,321,925	1,725,673	195,425	945,182	1,574,311
Dressed—						
Hatters' furs.....	1,258	169,730	503,676	—	149,406	377,083
Mink.....	650	567,906	593,116	6,433	530,470	543,043
Seal.....	25,674	2,772,883	2,872,792	12,096	2,034,642	2,198,494
Sheep and lamb.....	67,186	103,841	391,637	111,240	165,541	1,010,204
Fur plates, mats, etc.....	16,382	421,640	583,016	25,476	588,150	755,890
Other.....	55,928	517,303	815,902	153,983	514,205	799,333
Fur goods apparel.....	17,936	141,586	191,531	26,321	180,549	253,511
<b>Totals.....</b>	<b>3,372,047</b>	<b>13,132,014</b>	<b>25,308,124</b>	<b>3,566,730</b>	<b>13,109,899</b>	<b>26,225,584</b>

<sup>1</sup> Included in "Other".

## Subsection 2.—The Fur Processing Industry

The rather general term "fur processing" includes the fur dressing and dyeing industry and the fur goods industry. The former is concerned with the dressing or dyeing of pelts on a custom basis and the latter is a manufacturing industry that makes up fur goods such as coats, scarves and gloves.

In the 1962 survey, as explained in Chapter XVI on Manufactures, a change was made in the "total activity" approach; Tables 7 and 8 give selected statistics on the new basis for 1962-64. In 1964, the number of skins treated was 4,831,560, of which mink comprised 30 p.c., muskrat 18 p.c., Persian and other types of lamb 13 p.c., raccoon 9 p.c., sheep, shearing and other types of sheep 5 p.c., and all other types of skins 25 p.c.

#### 7.—Principal Statistics of the Fur Dressing and Dyeing Industry, 1962-64

Item	1962	1963	1964
Establishments..... No.	19	18	16
Administrative and Other Salaried Employees—			
Male..... No.	92	72	68
Female..... "	25	25	23
Salaries paid..... \$	739,276	648,879	592,186
Production and Related Employees—			
Male..... No.	781	763	641
Female..... "	137	136	121
Wages paid..... \$	3,209,152	3,368,466	3,155,044
Cost of materials used in manufacturing..... \$	1,586,469	1,530,371	1,087,716
Pelts treated..... No.	6,229,747	5,738,549	4,831,560
Amount received for treatment of furs and other manufacturing revenue..... \$	7,143,496	7,013,118	6,559,077

The shipments of ladies' fur coats and jackets by all industries in 1964 numbered 128,117 and were valued at \$41,166,000.

#### 8.—Principal Statistics of the Fur Goods Industry, 1962-64

Item	1962	1963	1964
Establishments..... No.	429	419	433
Administrative and Other Salaried Employees—			
Male..... No.	496	461	448
Female..... "	179	174	183
Salaries paid..... \$	3,310,355	3,448,066	3,492,936
Production and Related Employees—			
Male..... No.	1,712	1,500	1,596
Female..... "	928	813	804
Wages paid..... \$	9,342,619	8,987,115	9,577,573
Cost of materials used in manufacturing..... \$	36,369,045	38,405,020	39,661,314
Value of factory shipments and other manufacturing revenue... \$	58,089,700	59,912,851	62,535,712
Total revenue..... \$	61,114,712	61,946,676	64,514,747

### Section 3.—Provincial and Territorial Fur Resource Management

Most of the fur resources of the provinces and territories of Canada are under the administration of the respective governments and councils. Exceptions include those resources within the boundaries of the National Parks and the Indian reserves, which are under the administration of the Federal Government. The Canadian Wildlife Service of the Department of Indian Affairs and Northern Development is responsible for all Federal Government interests in wildlife resources except for those related to Indian affairs, which

are administered by the Indian Affairs Branch of the same Department. The Canadian Wildlife Service co-operates with provincial governments and other agencies concerned and handles federal interests in relevant national and international problems (see pp. 49-51). Provincial fur resource management practices are discussed in the following paragraphs.

**Newfoundland.**—For the past several years, the Wildlife Division of the provincial Department of Mines, Agriculture and Resources has been operating experimental beaver traplines on the Avalon and Burin Peninsulas. Legislation has now been prepared to permit the extension of this trapline system to cover all fur bearers throughout the Island of Newfoundland for the 1966-67 and subsequent trapping seasons. In general, trapping regulations provide for fall and winter trapping seasons for muskrat, otter, beaver and mink within the Island of Newfoundland and for beaver, mink, marten, muskrat, otter, fisher and Arctic fox in Labrador. Trapping is permitted throughout the year for fox, lynx, weasel, wolf and wolverine.

Although not directly connected with fur bearer management, interesting findings regarding one fur bearer—the lynx—have been made in Newfoundland. In 1964, during an investigation of caribou calf mortality, it was determined that when a caribou calf was bitten by a lynx, saliva bacteria were transmitted to the wound and the ensuing infection caused death in most cases. To eliminate this cause of death among young caribou, Wildlife Division officers have since carried out extensive lynx trapping in the vicinity of the caribou calving areas, resulting in a higher percentage of calf survival.

**Nova Scotia.**—Nova Scotia's wild fur bearers include beaver, muskrat, mink, otter, fox, raccoon and weasel and the trapping of these animals provides supplementary income for several thousand persons who harvest from \$100,000 to \$200,000 worth of wild furs each year. The value, of course, depends on the numbers of each fur species available and on fur prices, both being subject to marked variations from year to year.

The beaver, once almost extinct in the province, is now the most valuable fur bearer taken. A \$2 licence is required by residents to trap a limited number of beavers (five to ten) during the approximately six-week season beginning Nov. 1. No licence is required to trap other fur bearers, although a royalty must be paid to the province for each pelt exported. These animals may be taken between Nov. 1 and Dec. 14.

Beaver research is at present being carried on in Nova Scotia to increase knowledge of this valuable animal as a preparation for better management of its population. Behaviour, feeding, movement and reproduction studies are being conducted near the Tobieatic Sanctuary in western Nova Scotia, in Cumberland County in the eastern part of the province and in an enclosed area in Queens County. In addition, data on size, age, parasites and diseases are collected from beaver carcasses taken by trappers in all parts of the province.

Several trappers' associations have been started throughout the province so that the men closest to the fur resource may have some say in its wise use and management. These groups can also assist in ensuring proper handling and marketing of the raw furs and in up-grading quality, thus commanding good market prices.

**New Brunswick.**—The initial investigation under the fur management program under way in New Brunswick concerned the muskrat and was conducted in the estuary of the St. John River, one of the better muskrat areas in the province. Such investigation will soon be extended to other fur bearers, especially beaver. Beaver were protected against trapping for about 20 years until the first open season was declared in 1946. As a result, the beaver has made a remarkable recovery and there has been an open season each year since 1951, the annual take averaging about 7,500 pelts. At present, beaver damage done to farms and woodlots, highways and railways is causing some concern.

The trapping of fisher and marten was permitted during the 1964-65 trapping season for the first time since 1946. These animals are found mainly in the northern part of the province but their numbers appear to be increasing and they are gradually working their



way southward. During the late winter of 1966, a number of fisher were live-trapped in northern New Brunswick and released in the Fundy Mountains in an attempt to re-establish them there. Mink and otter are not abundant but in the fall trapping season the catches average from 1,500 to 2,000 and from 200 to 250, respectively. In 1964-65, 3,320 trapping licences were issued.

Provincial legislation enables quick changes to be made in trapping seasons; thus, the autumn benefit of available fur may be utilized by a trapper or a closed season established on any fur bearer showing signs of serious depletion in numbers. A summary of trapping laws, which includes information on how the different pelts should be handled to receive the best price, is available from the Fish and Wildlife Branch of the provincial Department of Lands and Mines.

**Quebec.**—The fur trade has been of considerable importance in Quebec since the beginning of New France and the province has remained in the forefront of fur producers. The principal native species, in order of importance, are beaver, mink, muskrat, hair-seal, otter, lynx and marten.

Management of wild fur bearers began in 1932 with the establishment by an official of the Hudson's Bay Company of a privately leased reserve at Rupert House. The administration of this reserve passed to the Hudson's Bay Company and a second concession, at Nottoway, was granted to the Company in 1938. Strict conservation practices were enforced in these two reserves with such success that the provincial government took over their management and has since added steadily to the area of Crown lands set aside for Indian trappers. At present, 12 reserves are under conservation: Rupert House, 7,500 sq. miles (1932); Nottoway, 11,300 sq. miles (1938); Vieux Comptoir, 30,000 sq. miles (1941); Peribonca, 12,600 sq. miles (1941); Fort George, 17,700 sq. miles (1942); Abitibi, 6,000 sq. miles (1943); Great Victoria Lake, 6,300 sq. miles (1948); Mistassini, 50,000 sq. miles (1948); Manouane, 5,000 sq. miles (1951); Roberval, 20,000 sq. miles (1951); Bersimis, 21,000 sq. miles (1951); and Saguenay, 140,000 sq. miles (1955). The number of beaver pelts alone taken from these reserves in the year ended Mar. 31, 1965 was 16,065, having a value of \$212,201.

In 1945, a separate system of registered lands for white trappers was set up in the areas of Abitibi East, Abitibi West, Rouyn-Noranda, Témiscamingue, Pontiac and part of Saguenay County. Each leaseholder is granted exclusive trapping rights on his assigned land and each is subject to strict regulation. The trapping of fur bearers, other than beaver, is not restricted on either the reserves or the registered lands except for a general regulation concerning the protection of animals and the fixing of catch limits. Recently, biological research has been undertaken to assess the results of this system.

In 1964-65, the value of the catch of wild furs in Quebec amounted to \$2,569,471—a fraction of the value of the finished product.

**Ontario.**—Legislation for the management of wild fur bearers had its beginning in Ontario with the setting of seasons in 1860 by an Act of Upper Canada. However, 32 years passed before there was any field staff to enforce the regulations and then began an era of restrictive legislation to protect species threatened by the earlier exploitation. Progress beyond the restrictive enforcement of open and closed seasons has come about only in the past 20 or 30 years. The first steps in this direction involved the setting aside of special Indian hunting areas in which non-Indians were not allowed to trap.

The registered trapline system was introduced in 1935 on a very small scale. This system is based on government recognition of the desirability of full utilization of the resource and the more efficient management that results when one individual enjoys the exclusive right to trap on such an area. In its early stages, surveyed townships were assigned as trapline areas but more explicit trapline boundaries, established in 1947-48, now cover the province and mostly follow natural physiographical features. At the same time, resident traplines were established in areas of patented land, which means most of southern

Ontario; these are blocks of land on which trappers are licensed to trap, providing they make their own written agreements with the landowners. Trapline licences are renewable annually as long as the trapper meets the conditions of the regulations and continues to trap. Trappers may sell the equipment and improvements they have made on their lines and so have a vested interest in their traplines.

In full realization that fur is a natural resource that cannot in nature be stockpiled, and is harvested on a commercial basis only, the Ontario Department of Lands and Forests has assisted the Ontario Trappers' Association to establish their fur auction at North Bay. This allows the trappers to sell furs on a competitive market and realize their full value.

Much valuable research has been carried out on fur bearers, with present emphasis on beaver and otter. Transplantings have been successfully carried out to speed the recovery of reduced populations, particularly with beaver. A new aging technique was perfected for beaver in 1964 and an aerial beaver survey technique was developed recently.

**Manitoba.**—Trading in furs is Manitoba's oldest industry and the province produces some of the finest pelts on the world markets. The annual value of production varies widely, depending both on the cyclic abundance of fur bearing animals and on world prices for the pelts produced.

As the northern portion of Manitoba became more accessible following construction of the Hudson Bay Railway to Churchill, competition for fur and for trapping grounds became so severe that the fur resources were sadly depleted. In 1940, Manitoba started a program of trapline registration. The program provided security of tenure to individuals or community groups of trappers, weeded out the part-time trappers and changed harvesting of wild fur from fur mining to wild fur farming. At that time beaver were a rarity and a series of closed seasons had been declared. Since then, beaver have increased steadily and 41,869 pelts were harvested in the 1964-65 season. Within the past decade new records in the production of muskrat, beaver, mink, lynx, fisher and otter have been set for this century.

The wild fur industry is still of economic importance in the province, and particularly so for northern residents, both white and native. A program of trapper education, inaugurated in 1957 and designed to improve the general handling of furs by trappers and at the same time achieve a certain measure of standardization in pelt care, has shown gratifying results. It has been expanded to include improved trapping methods and the use of humane trap sets; a booklet, *The Trapper's Guide*, is available from the Wildlife Branch of the Department of Mines and Natural Resources.

Manitoba has been working in close co-operation with federal and other provincial agencies in the promotion of quality furs by contributing a collection of representative wild furs for exhibit at the more important European fairs.

**Saskatchewan.**—Before the introduction of Saskatchewan's fur conservation and development program, little was done to control the trapping of beaver and muskrat. During open seasons, trappers took every pelt available and then the season had to be closed the following year in hope of natural population build-up. This "feast and famine" policy had a disastrous effect on both the fur resources and the livelihood of trappers. Few trappers had exclusive rights to specific areas and most of them were unable to establish permanent homes in communities. Poaching was common practice and there was little economic security. Beaver began declining steadily after World War I and this affected the habitat for other fur bearers as well.

In 1944, the Saskatchewan Government set up a committee to study trapping problems and the following year the South Saskatchewan Muskrat Trapping Program was instituted. Under this plan, individuals received exclusive rights to trap on definite land locations. Owners and occupants received first consideration, with special priority given to Indians and metis on Crown lands. Muskrat quotas were established to assure continuing populations, and marketing of pelts under government supervision was instituted.

In 1946, under federal-provincial agreement, all Crown lands north of the 53rd parallel were set up as the Northern Fur Conservation Block. Up to \$50,000 a year was to be expended over the following ten years to establish and administer conservation areas, purchase equipment, pay salaries of personnel, transplant live beaver and build dams; the Federal Government agreed to assume 60 p.c. of the cost and the province the remainder. A Fur Advisory Committee, with representation from the provincial Department of Natural Resources and the federal Indian Affairs Branch was set up to supervise the program. Organization of conservation areas was left to the trappers. Five-man councils were elected in all districts, with Indian, metis and white trappers sharing privileges, obligations and responsibilities on an equal basis. Conservation measures and licensing regulations were initiated. In 1956 the agreement was extended for another ten years with minor changes and in 1962 a co-ordinating body was set up by the Fur Advisory Committee to promote better communications and understanding of the fur program. The second federal-provincial agreement terminates in 1966 and negotiations are under way for the drafting of a new agreement which will provide, in addition to an extended fur program, a greatly enlarged plan covering the development of other natural resources, such as fish, forest development on Indian reservations, harvesting of wild rice and other natural crops, etc.

Under the present fur program, security of trappers has been strengthened; fur bearer population, although still fluctuating to some extent, has through management reached a higher general level, particularly of beaver which is the most important fur animal, rivalled only by wild mink; quotas have put trapping on a sustained-yield basis; poaching has been almost eliminated; higher water levels resulting from the comeback of beaver have improved the habitat for other wildlife; and Indian and non-Indian trappers are sharing alike in the self-government of trapping areas and in fur management programs.

**Alberta.**—During 1965-66, plans have been formulated for the reorganization of the Fish and Wildlife Division of the provincial Department of Lands and Forests. Under the new set-up, a fur management section will be established to work strictly on the fur resources of the province. More meetings will be held with registered trappers to increase the exchange of information between them and the Division's officers and a more intensive program is being initiated to eliminate as far as possible the misuse of trapping areas by certain trappers and, by amalgamation, to form trapping areas into better economic units. The Alberta Government submits pelts to the main fur exhibits in Canada and Europe, a policy that has increased the interest of foreign and Canadian buyers in Alberta furs.

**British Columbia.**—The British Columbia wild fur resource is administered by the Fish and Wildlife Branch of the Department of Recreation and Conservation. Regulations are derived under authority of the Wildlife Act and resource use is controlled under the registered trapline system, in effect since 1926. Registered traplines are areas of Crown land allotted, for the purpose of trapping wild fur, to trappers who are resident in the province. Registration of a specific trapline is renewable on an annual basis by the trapper, subject to certain requirements of tenure aimed at conservation and sustained yield of fur species. Approximately 3,000 trappers are involved in provincial wild fur production, of whom one half are Indians.

The market value of wild fur produced during the fur harvest of 1964-65 was \$600,316, with beaver, squirrel, wild mink and lynx together comprising 78 p.c. of this total value. The 1964-65 beaver harvest numbered 21,769 pelts.

Legislative measures entail a general shortening of the annual trapping season to restrict the harvesting of unseasonable pelts. Administrative emphasis is placed on the desirability of increasing the market value of the resource through improved pelt quality. The Branch is a member of the Canadian Fur Council.

---



# CHAPTER XV.—ELECTRIC POWER\*

## CONSPECTUS

	PAGE		PAGE
SECTION 1. ELECTRIC POWER DEVELOPMENT.	634	SECTION 2. PROGRESS IN CONSTRUCTION OF GENERATING FACILITIES, 1965.....	644
Subsection 1. Historical and Current Trends in Power Development.....	634	SECTION 3. POWER GENERATING CAPABILITY AND LOAD REQUIREMENTS.....	648
Subsection 2. Utilization of Power.....	637	SECTION 4. ELECTRIC POWER STATISTICS.....	651
Subsection 3. Water Power Resources, Undeveloped and Developed.....	638	SECTION 5. PUBLIC OWNERSHIP AND REGULATION OF ELECTRICAL UTILITIES.....	655
Subsection 4. Thermal Power Generation..	642		

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

## Section 1.—Electric Power Development

### Subsection 1.—Historical and Current Trends in Power Development

Electric power development in Canada has undergone remarkable and sustained growth since the beginning of the century. From a modest 133,000 kilowatts of generating capacity installed at the end of 1900, Canada's installed hydro capacity rose to almost 21,800,000 kw. by the end of 1965, and thermal capacity to 7,600,000 kw.

The chart opposite shows the expansion in installed generating capacity in hydro and thermal stations that has taken place since 1920. Thermal-electric power development in Canada was not well documented early in the century but it is apparent that its growth was slow and of relatively minor importance until the late 1940s. The rate of development of hydro facilities, on the other hand, tended to accelerate after the turn of the century when improvements in electric power transmission techniques were introduced and increasing emphasis began to be placed on the construction of large hydro-electric stations.

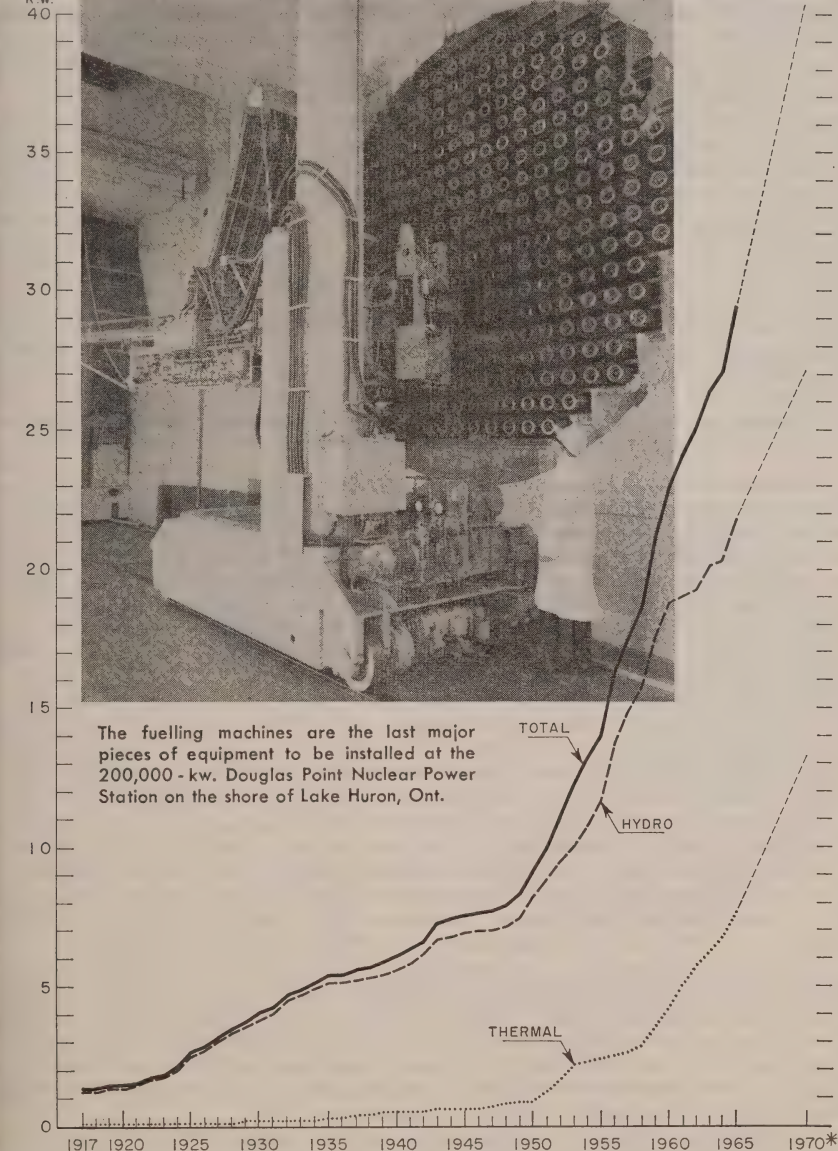
During the prosperous 1920s, demand for electricity became heavier and the rate of installation increased appreciably. Then, under the depressed conditions of the early 1930s power demand dropped off but did not show up immediately as a drop in the installation rate because of the time lag inherent in hydro-electric power development. The completion of hydro projects initiated prior to the depression period accounted for the continuation of a high rate of capacity installation up until 1935; thereafter, poor economic conditions in the 1935-39 period resulted in a reduced rate.

In the early war years, the tremendous demand for power to drive Canada's war industries accounted for the sharp rise in installation of new generating facilities between 1940 and 1943 but in the later war years construction dropped off so that, from 1944 to 1947, a second flattening occurred in the growth curve. After the War, industrial expansion and rapidly growing residential and agricultural development placed extremely heavy demands on power generating facilities, to stay abreast of which the addition of new capacity was required at a rate higher than at any time in Canada's history. These demands also led to the start of an extensive program of thermal plant construction in the early 1950s, since they could not be satisfied from hydro sources alone. In the period

\* Sections 1 and 2 of this Chapter were prepared by the Water Resources Branch, Department of Energy, Mines and Resources, Ottawa; Sections 3 and 4 were revised by the Energy Statistics Section, Industry Division, Dominion Bureau of Statistics, and Section 5 by the various provincial Commissions concerned.

# GROWTH IN ELECTRIC POWER GENERATING CAPACITY IN CANADA, 1917-70

Million  
k.w.



\*PROJECTION

1950-65, the average annual rate of installation of both hydro and thermal facilities was about 1,200,000 kw., with hydro contributing two kilowatts of new capacity for each kilowatt contributed by thermal. However, it is interesting to note that the average increase in thermal generating capacity over the period 1960-65 equalled the increase in hydro capacity and promises to surpass it in the not too distant future.

Table 1 shows the present status of installed generating capacity in hydro and thermal stations and the combined total for all stations in Canada as at Jan. 1, 1966.

**1.—Installed Hydro- and Thermal-Electric Generating Capacity,  
by Province, as at Jan. 1, 1966**

Province or Territory	Hydro	Thermal	Total
	kw.	kw.	kw.
Newfoundland.....	466,000	75,000	541,000
Prince Edward Island.....	—	58,000	58,000
Nova Scotia.....	143,000	489,000	632,000
New Brunswick.....	262,000	320,000	582,000
Quebec.....	10,339,000	447,000	10,786,000
Ontario.....	6,064,000	3,217,000	9,281,000
Manitoba.....	1,074,000	339,000	1,413,000
Saskatchewan.....	320,000	648,000	968,000
Alberta.....	445,000	959,000	1,404,000
British Columbia.....	2,616,000	1,020,000	3,636,000
Yukon Territory.....	28,000	4,000	32,000
Northwest Territories.....	35,000	26,000	61,000
<b>Canada.....</b>	<b>21,792,000</b>	<b>7,602,000</b>	<b>29,394,000</b>

**Current Trends.**—Although water power traditionally has been and still is the main source of electric energy in Canada, thermal sources some day will undoubtedly become the main supplier. The choice between development of a hydro-electric power site and construction of a thermal generating station must take into account a number of complex considerations, the most important of which are economic in nature. In the case of a hydro-electric project, the heavy capital costs involved in construction are offset by maintenance and operating costs considerably lower than those for a thermal plant. The long life of a hydro plant and the dependability and flexibility of operation in meeting varying loads are added advantages. Also important is the fact that water is a renewable resource. The thermal station, on the other hand, can be located close to the demand area, with a consequent saving in transmission costs. With the current trend to large steam stations, however, a certain amount of the flexibility of location of thermal stations is lost because large steam units require considerable quantities of water for cooling purposes, making it essential that such stations be sited close to an adequate water supply.

The marked trend to thermal development which became apparent in the 1950s can be explained in part by the fact that, by that time, in many parts of Canada most of the hydro-electric sites within economic transmission distance of load centres had been developed and planners had to turn to other sources of electric energy. More recently, however, advances in extra-high-voltage transmission techniques are providing a renewed impetus to the development of hydro power sites previously considered too remote.

Because of the relatively long starting-up time required by large thermal units, thermal stations tend to lack flexibility of operation and can be used most efficiently to meet continuous load conditions. Hydro stations, on the other hand, can put generating units on the line with minimum delay and hence are admirably suited to supply power to meet the peak loads which may occur several times each day. By combining the advantages of both hydro and thermal stations in integrated supply systems, power producers are now achieving much greater flexibility of operation.

Another trend in development designed to meet the problem of varying daily loads is the use of pumped storage. An example is the Sir Adam Beck hydro development at Niagara Falls where water taken from the Niagara River above the Falls is carried by



tunnel and power canal to penstocks which supply the main generating station on the bank of the Niagara River some distance below the Falls. In off-peak hours, power from the main station is used to pump water from the power canal into a reservoir maintained at a higher level; during peak-load hours, the pumps, which are dual-purpose units, operate as generators and are driven by water released from the reservoir. The pumping-generating units at this development make available an extra 176,700 kw. of generating capacity. A pumping-generating station using the same general principle is under construction on the Brazeau River in Alberta as part of the 338,440-kw. Big Bend hydro development.

Perhaps the most promising application of the pumping-generating principle is its use in conjunction with nuclear power stations. Nuclear units, in common with the larger conventional thermal units, can be used most efficiently under conditions of continuous operation. Off-peak nuclear power can be used to operate pump-turbine units and the hydro-electric power derived from operating the units as generators is available for use during periods of peak demand.

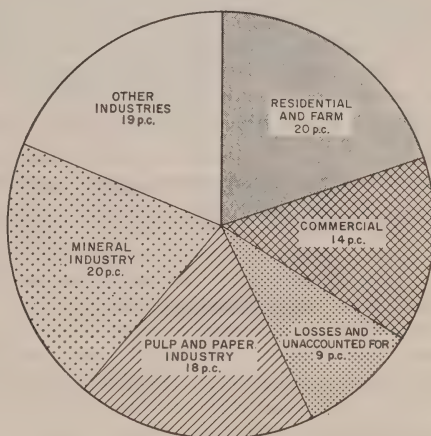
### Subsection 2.—Utilization of Power

In 1965, Canada's generating facilities produced a total of 143,160,958,000 kilowatt-hours of electric energy, after allowing for the energy used in the power stations themselves. Of this total, 116,712,297,000 kwh. was produced in hydro-electric stations and 26,448,661,000 kwh. in thermal stations. Energy imported from the United States exceeded by 7,407,000 kwh. the energy exported to the United States during the year, bringing to 143,168,365,000 kwh. the total energy made available. The diagram illustrates how this energy was used.

Industry uses approximately 57 p.c. of the total electric energy made available in Canada; residential and farm use accounts for 20 p.c. and commercial use 14 p.c. The remaining 9 p.c. is listed under "losses and unaccounted for". Because many power producers do not distinguish in their records between residential and farm customers, the amount of energy used is shown as a combined total. A small amount of energy used for street lighting, slightly less than 1 p.c. of the total energy made available, is included in the "commercial" category.

About 20 p.c. of the total energy made available in Canada is used in the mineral industry, including smelting and refining, 18 p.c. by the pulp and paper industry and 19 p.c. by other industries. Of the latter, the chemical industry and the primary iron and steel industry together consume almost one half. Approximately 75 p.c. of the energy consumed by the mineral industry is used in the smelting and refining of metals.

Canada has no known deposits of bauxite but the availability of low-cost hydro-electric power has fostered the establishment of an aluminum industry which produces one quarter of the world's supply of this metal. Further evidence of the value of water power to mining operations is provided by the fact that Canada's asbestos industry, which produces about 40 p.c. of the total world supply of asbestos, obtains the major part of its power supply from hydro-electric sources.



The incidence of large water power resources in those regions in which the more important mineral deposits have been found has greatly facilitated mining development. Recent examples are the nickel mining and refining complex at Thompson, Man., which uses hydro power generated in the Kelsey plant on the Nelson River, and the iron ore mining operations in Labrador, supplied by the Twin Falls plant on the Unknown River.

Metal mining, a very important division of the Canadian mining industry, is carried on mainly in two physiographic regions, the Western Cordillera and the Canadian Shield. In the Western Cordillera, the mountainous topography and the relatively high amounts of precipitation favour the development of water power. In the Canadian Shield, which is a Precambrian formation stretching in a wide sweep around Hudson Bay from the Mackenzie River basin to the eastern tip of Labrador, heavy glaciation in recent geological times has formed river systems which are comparatively young and are characterized by large numbers of lakes connected by short river sections with numerous rapids and falls suitable for the development of hydro-electric power.

Canada's pulp and paper industry is one of the world's great industrial enterprises. Total mill capacity for the production of newsprint paper is considerably greater than that of any other country in the world and in total production of wood pulp, Canada is second only to the United States. The fact that over 90 p.c. of the manufactured newsprint is exported gives some indication of the importance of the industry to the Canadian economy. By far the larger portion of the energy used in the pulp and paper industry is derived from water power.

### Subsection 3.—Water Power Resources, Undeveloped and Developed

Table 2 presents a summary of developed water power in Canada and an estimate of undeveloped water power potential, based on records maintained by the Water Resources Branch of the Department of Energy, Mines and Resources. Estimates of available power are shown for undeveloped sites only; for developed sites, the total generating capacity actually installed is indicated. It should be noted that the capacity installed at an existing hydro-electric development is frequently in excess of the continuous power available at the site. The relationship between installation and available power is explained on p. 639.

#### 2.—Water Power Resources, by Province, as at Jan. 1, 1966

Province or Territory	Undeveloped Water Power			Developed Water Power
	Available Continuous Power at 88 p.c. Efficiency			Installed Generating Capacity
	at Q95 <sup>1</sup>	at Q50 <sup>2</sup>	at Qm <sup>3</sup>	
	kw.	kw.	kw.	
Newfoundland.....	1,240,000	3,635,000	4,871,000	466,000
Prince Edward Island.....	—	1,000	2,000	—
Nova Scotia.....	21,000	112,000	165,000	143,000
New Brunswick.....	62,000	221,000	497,000	262,000
Quebec.....	8,500,000	25,800,000	32,500,000	10,339,000
Ontario.....	467,000	1,102,000	1,663,000	6,064,000
Manitoba.....	2,964,000	5,501,000	5,853,000	1,074,000
Saskatchewan.....	773,000	1,298,000	1,559,000	320,000
Alberta.....	895,000	3,244,000	4,866,000	445,000
British Columbia.....	4,946,000	16,635,000	24,665,000	2,616,000
Yukon Territory.....	664,000	3,237,000	5,689,000	28,000
Northwest Territories.....	884,000	2,232,000	3,322,000	35,000
<b>Canada.....</b>	<b>21,396,000</b>	<b>63,018,000</b>	<b>85,652,000</b>	<b>21,792,000</b>

<sup>1</sup> Power equivalent of flow available 95 p.c. of the time of the time.

<sup>2</sup> Power equivalent of flow available 50 p.c. of the time.

<sup>3</sup> Power equivalent of arithmetical mean flow.

**Undeveloped Water Power Resources.**—Table 2 gives estimates of undeveloped power based on different rates of flow: the first column indicates continuous power ordinarily available during periods of low discharge under existing conditions of river flow based on Q95, which is the natural or modified flow available 95 p.c. of the time; the second column shows dependable maximum power based on Q50, which is the natural or modified flow available for at least 50 p.c. of the time; and the third column shows dependable maximum power based on Qm, the arithmetical mean flow. On rivers for which flow records are sparse or non-existent, estimates of flow are made from available information relating to run-off in the same general area. The hydraulic head used in calculating undeveloped water power is based on the actual drop or the feasible concentration of head which has been measured or carefully estimated. Preliminary figures for Quebec supplied by the provincial Department of Natural Resources, however, reflect the net river power potential which would result from development of the entire head available on Quebec rivers.

It should be emphasized that the figures of the first two columns represent only the minimum water power possibilities in Canada for the reason that the estimates are based upon existing river flow and, for the most part, do not reflect the benefits of streamflow regulation that would result from the development of storage potential. On the other hand, the arithmetical mean flow figures represent the power that would be obtainable if the entire flow in the river could be regulated to provide a continuous flow of constant magnitude. It can readily be seen that, because the latter condition assumes complete regulation, estimates of potential based upon arithmetical mean flow will, if other pertinent factors are neglected, exceed the amount of capacity that might be expected to be installed at the site, particularly where little or no storage is available. However, recent experience in the development of water power sites has indicated that, in fact, the generating capacities installed at many sites are very considerably in excess of what might be dictated by even the arithmetical mean flow. Several major river-diversion possibilities exist, particularly in British Columbia. For this reason, the estimates of potential of British Columbia's undeveloped hydro resources have recently been boosted substantially, mainly because of the inclusion of figures based upon the diversion of rivers which, if they are developed at all, will almost certainly be developed on a combined-river basis.

**Developed Water Power Resources.**—The figures of installed generating capacity given in Table 2 are based on the manufacturer's rating in kilowatts as shown on the generator name-plate, or derived from the rating where it is indicated in kilovolt-amperes. The maximum economic installation at a power site can be determined only by careful consideration of all the conditions and circumstances pertinent to its individual development. It is usual practice, however, to install units having a combined capacity in excess of the available continuous power at Q50, and frequently in excess of the power available at Qm. There are a number of reasons for this. The excess capacity may be installed for use at peak-load periods, to take advantage of periods of high flow, or to facilitate plant or system maintenance. In some instances, storage dams have been built subsequent to initial development to smooth out fluctuations in river flows. In other cases, deficiencies in power output during periods of low flow have been offset by auxiliary power supplied from thermal plants, or by inter-connection with other plants which operate under different load conditions or are located on rivers with different flow characteristics.

Thus, the extent to which the installed capacity exceeds the available continuous power at the various rates of flow is dependent upon the factors that govern the system of plant operation, and varies widely in different areas of the country. In some developments, the difference may amount to several hundred per cent. For this reason, discretion should be used in comparing the figures in the last column with those in the preceding columns, as available continuous power and installed capacity are not directly comparable. As a rough guide, however, it may be assumed that the power equivalent of the flow at Q50 represents an approximate, if conservative, estimate of hydro generating capacity remaining to be installed in Canada.



**Provincial and Territorial Distribution.**—The provincial and territorial distribution of undeveloped water power resources and installed generating capacity, given in Table 2, reveals that substantial amounts of water power have been developed in all provinces except Prince Edward Island, where water power resources are meagre. As natural resource development proceeds, the fortunate incidence of water power in proximity to mineral, forest and other resources becomes increasingly apparent. There is little doubt that the existence of large amounts of potential hydro power on northern rivers will prove to be a factor of prime importance in the eventual realization of the natural wealth of Canada's Northland.

The water power resources of *Newfoundland*, determined on the basis of the limited available streamflow data, are estimated to be of very considerable magnitude. On the Island, although the length of the rivers is generally not great, topography and run-off are favourable for hydro-electric power development. Of the substantial capacity installed, a very large portion serves the pulp and paper industry. In Labrador, the Churchill River and its tributaries, for the most part undeveloped, constitute one of the largest potential sources of water power in Canada.

In *Prince Edward Island* there are no large streams and water power plants are limited in size to those used to operate small mills. The water power resources of *Nova Scotia* and *New Brunswick*, although small in comparison with those of other provinces, are a valuable source of energy and make a substantial contribution to the economies of the two provinces. Numerous rivers in both provinces provide moderate-sized power sites either within economic transmission distance of the principal cities and towns or advantageously situated for use in development of the timber and mineral resources. These provinces are also favoured with abundant indigenous coal supplies.

*Quebec* is the richest of all the provinces in water power resources, possessing approximately 45 p.c. of the total recorded for Canada. Quebec also leads in developed water power, its present installation of 10,339,000 kw. representing about 48 p.c. of the national total. The largest single hydro-electric installation in Canada is the Quebec Hydro-Electric Commission's 1,574,260-kw. Beauharnois development on the St. Lawrence River; also notable are the Commission's Bersimis I development on the Bersimis River having an installed capacity of 912,000 kw., and the Aluminum Company of Canada Limited's 742,500-kw. Chute des Passes plant on the Peribonca River. A major power project which represents a significant advance in the development of Quebec's hydro-electric resources is under construction. This project, involving the harnessing of the headwaters of the Manicouagan and Outardes Rivers, will permit the eventual installation of some 5,800,000 kw. on the two rivers. Power production in the province is facilitated by the regulation of streamflow by the provincial Department of Natural Resources through the storage dams which it owns and operates. In 1965, some of the responsibility for regulation was transferred to the Quebec Hydro-Electric Commission.

Almost all of the sizable water power potential in *Ontario* within easy reach of demand centres has been developed and planners are looking to the more remote sites as new sources of supply. Improvements in long-distance transmission techniques have brought many of these sites within the economic orbit of demand centres. Several sites are being developed and a number of others are under investigation. Most of the hydro-electric power produced in the province comes from the generators of The Hydro-Electric Power Commission of Ontario, Canada's largest power producing and distributing organization. Ontario's largest generating station is located on the Niagara River at Queenston, where the Sir Adam Beck-Niagara Generating Stations Nos. 1 and 2, and the associated pumping-generating station have a combined generating capacity of 1,804,200 kw. In addition to the power generated in its own plants, the Commission purchases large amounts of electric power generated outside the province, chiefly in Quebec.

Of the three Prairie Provinces, *Manitoba*, with immense hydro-electric capabilities on the Winnipeg, Churchill, Nelson and Saskatchewan Rivers, is the most generously endowed with water power resources. Until recently, hydro-electric generating stations

on the Winnipeg River supplied most of the power requirements of southern Manitoba. Manitoba Hydro's high-voltage, long-distance transmission lines, however, will carry ever-increasing amounts of power south from hydro-electric stations on northern rivers to help meet the province's constantly growing power demands. Large water power resources exist in the central and northern parts of *Saskatchewan*, principally on the Churchill, Fond du Lac, and Saskatchewan Rivers. In 1963, power from Squaw Rapids, the first hydro development on the Saskatchewan River, was fed into the transmission network of the provincially owned Saskatchewan Power Corporation, which serves the more settled areas of the province. These areas previously had been served by electric power from thermal plants fuelled by coal, oil or natural gas, the hydro-electric power generated in the province being used almost exclusively for mining purposes in northern areas. In *Alberta*, the principal hydro-electric developments are located on the Bow River and its tributaries and, from these developments, Calgary Power Ltd. serves most of the southern part of the province. In 1965, energy from a large hydro unit on the Brazeau River in the headwaters of the North Saskatchewan River came on line, augmenting the energy from the Bow River plants. Substantial water power resources are located in the northern regions and, although these are somewhat remote from present centres of population, the advent of extra-high-voltage transmission has enhanced the prospect of their development.

*British Columbia* has many mountain streams that offer abundant opportunity for the development of hydro-electric power. In terms of recorded available water power resources, developed and undeveloped, the province ranks second in Canada and is exceeded only by Quebec and Ontario in the amount of generating capacity installed. Notable for the magnitude of their power potential are such rivers as the Columbia, the Fraser, the Peace and the Stikine. Up to the present time, however, hydro-electric developments on smaller rivers in the southern areas have satisfied the major load requirements of the province but now the immense power resources of the Peace River are in process of being harnessed and by 1968 will supplement the energy supply. Development of the Columbia River, now well under way, is designed to provide initially three huge storage reservoirs and eventually to make available a significant amount of 'at site' power in the Canadian portion of the basin. The foremost producer and distributor of electric power in British Columbia is the provincially owned British Columbia Hydro and Power Authority.

Power from present developments in the *Yukon Territory* and the *Northwest Territories* is used almost exclusively to satisfy the needs of local mines and adjacent settlements. Owing to the lack of developed native fuel sources and to transportation difficulties, water power is of special importance in the development of mining areas, such as Mayo in the Yukon Territory and Yellowknife in the Northwest Territories. In 1948, to encourage the development of the resources of Northern Canada, the Federal Government established what is now the Northern Canada Power Commission (see p. 150), to be responsible for the construction and management of public utility plants. In Yukon Territory, most of the resources are located on the Yukon River and its tributaries. The possibility exists of diverting the headwaters of the Yukon River through the Coast Mountains to utilize a high head near tidewater in northern British Columbia but such a development would affect adversely the potential of sites on the main river. Resources in the Northwest Territories have not been surveyed to the same extent as those in Yukon Territory but they are nevertheless known to be of considerable magnitude, particularly on rivers flowing into Great Slave Lake. Of major significance, as well, is the hydro-electric potential of the South Nahanni River, which drains to the Mackenzie River via the Liard River. On the basis of preliminary investigations, it is estimated that, with total regulation and complete use of the head susceptible of development, the hydro-electric potential of the South Nahanni River would be close to 1,000,000 kw. Indications are that the rivers draining the District of Keewatin, north of Manitoba, could also contribute materially to the total power potential of the Northwest Territories.



### Subsection 4.—Thermal Power Generation

The incidence of immense water power resources in Canada and the brisk pace of their development has tended to overshadow the very considerable contribution being made by thermal energy in the nation's power economy. At the end of 1965, the total installed thermal capacity in Canada was 7,602,000 kw., about 26 p.c. of the total electric generating capacity in the country. The fact that energy produced in thermal plants during the year accounted for only 18 p.c. of the total may be attributed in part to the fact that a considerable amount of the capacity installed is maintained for stand-by purposes. As stated earlier, however, the current emphasis on thermal plant construction is likely to continue and to become more marked as development of the nation's water power reserves becomes more complete.

**Conventional Thermal Power.**—Approximately 85 p.c. of all of the conventional thermal power generating equipment in Canada is driven by steam turbines. The magnitude of the loads being carried by steam plants has led to the installation of steam units with capacities as high as 300,000 kw. Even larger units, of 500,000-kw. capacity, will go into service within the next three or four years. The remainder of the load is carried by gas turbine and internal combustion equipment. The flexibility of internal combustion engines makes this type of equipment particularly suitable for meeting power loads in smaller centres, especially in the more isolated areas.

Table 1 (p. 636) shows that the Provinces of Prince Edward Island, Nova Scotia, Saskatchewan and Alberta depend upon thermal capacity for most of their power requirements and that New Brunswick has slightly more thermal than hydro. For Ontario, where the present hydro capacity is about twice the thermal, forecasts based on present construction schedules indicate that by the early 1970s the province's total installed thermal capacity will have overtaken hydro.

With the exception of several sizable plants in St. John's and Grand Falls, most of the thermal-electric capacity in *Newfoundland* is made up of relatively small units used to supply power to small, often isolated communities. With the wealth of water power readily available in the province, it is not likely that Newfoundland will experience the need for large thermal stations for some time to come. *Prince Edward Island* depends almost exclusively on thermal sources for its power supply and almost all of the province's generating capacity is oil-fuelled. In *Nova Scotia*, most of the energy generated in thermal-electric utility plants is derived from coal, with a smaller amount from petroleum fuels, and in *New Brunswick* petroleum fuels provide slightly more than half of the thermal-electric energy.

The abundance of *Quebec's* water power wealth, much of it within economic transmission distance of existing demand areas, has so far limited the application of thermal power to specific local use. However, the growing emphasis on thermal power in other parts of Canada is also beginning to be apparent in Quebec, where thermal capacity will serve not only to help guarantee an adequate power supply in the face of increasingly heavy demands but also to render the almost exclusively hydro-electric base more flexible through integrated operation. The second unit of a large thermal plant went into operation at Tracy near Sorel in 1965 and a second large plant is planned for service in the Gaspé region by 1970.

*Ontario* has more thermal capacity than any other province in Canada; capacity installed in the province at the end of 1965 totalled 3,217,000 kw., which was about 42 p.c. of the national total. With another 3,200,000 kw. of conventional thermal capacity and 1,400,000 kw. of nuclear thermal capacity scheduled for service in the period 1966-71, Ontario's share of the national total promises to increase considerably. The country's largest thermal stations are Ontario Hydro's Richard L. Hearn and Lakeview generating stations at Toronto, each with a capacity of 1,200,000 kw. Four 300,000-kw. units, the largest in operation in Canada, make up the capacity at the Lakeview station, scheduled for expansion



to 2,400,000 kw. by 1968. Four even larger units of 500,000-kw. capacity are planned for the Lambton station near Sarnia, installation of which will be completed by 1971.

*Manitoba* supplements its predominantly hydro-based power supply with a substantial amount of thermal capacity but current emphasis is on development of water power resources. *Saskatchewan*, until recently, has relied on thermal capacity to satisfy the needs of the more settled areas and hydro-electric power generated in the province has been used almost exclusively for mining purposes in the northern areas. In the past few years, however, development of storage on the South Saskatchewan River has made hydro-electric power available in the southern part of the province and plans for expanding the province's thermal capacity are limited for the present to a proposed extension to the 132,000-kw. Boundary Dam thermal station. The incidence of vast fuel resources accounts for the emphasis on thermal power generation in *Alberta*; the province's largest thermal plants are the 330,000-kw. gas turbine and steam station at Edmonton and the 282,000-kw. Wabamun steam station.

More than half of *British Columbia's* thermal generating capacity is installed in three plants located in the Vancouver area. The capacity of the largest of these plants, the 450,000-kw. Burrard generating station, is expected to be increased to 600,000 kw. by 1967.

Until 1965, most of the power requirements of the *Northwest Territories* were satisfied from thermal sources but the commissioning of the Twin Gorges hydro station on the Taltson River in 1965 has altered the balance in favour of hydro. In *Yukon Territory*, hydro is the larger contributor. Most of the thermal-electric energy in the Territories is generated by small diesel units.

**Nuclear Thermal Power.**—Commercial electric power generated from the heat of nuclear reaction became a reality in Canada in 1962 when the 20,000-kw. Nuclear Power Demonstration station at Rolphton, Ont., fed power for the first time into a distribution system in Ontario. The NPD station is the forerunner in a series of large nuclear stations that will shoulder more and more of Canada's rapidly growing power loads.

Research into reactor design and the application of nuclear energy in the electric power field are among the more important responsibilities of Atomic Energy of Canada Limited, a Crown company incorporated in 1952 (see also pp. 391-396). AECL has concentrated its efforts on the development of the CANDU reactor, which uses natural uranium as a fuel and heavy water as the moderator. By using heavy water as the moderator, a high energy yield can be obtained from natural uranium and, since natural uranium is a low-cost nuclear fuel, the cost of fuel is a minor component in the cost of producing power. Natural uranium has the added attraction of being available in commercial quantities in Canada.

The Canadian nuclear power reactor also offers the simplest of nuclear fuel cycles. Sufficient energy can be extracted from the fuel so that the economics of the system do not require a value to be placed on the spent fuel. There is, therefore, no need to carry out costly chemical processing of the spent fuel unless the worth of the remaining contained fissile material becomes sufficiently high to make chemical processing an economic proposition. The spent fuel is an ideal package for simple underwater storage and no large volume of highly radioactive liquids from a chemical processing plant has to be handled and contained.

The NPD station has been used extensively to demonstrate the ability of the system to operate at a high capacity factor and to determine the nature and predictability of outages. Fuel changes while the system is in operation have become routine and a considerable amount of research into the sources of heavy water losses has been carried out. As a result of this research, losses have been cut considerably and the NPD station is demonstrating that a very acceptable heavy water loss rate is attainable.

At Douglas Point on the shore of Lake Huron, the country's first full-scale nuclear power station will begin commercial production at the end of 1966. The station, built with the co-operation of Ontario Hydro, houses a 200,000-kw. CANDU reactor. Experience

gained in the design and operation of this reactor has encouraged the development of even larger units and plans have been announced for the construction of the two-unit, 1,080,000-kw. Pickering nuclear station to be built near Toronto, with in-service dates for the two units scheduled for 1970 and 1971.

## Section 2.—Progress in Construction of Generating Facilities, 1965

During 1965 Canada's electric power generating capacity increased by the massive total of 2,242,000 kw. Hydro capacity accounted for 1,434,000 kw. and thermal for the remaining 808,000 kw. With the exception of 1959, when nearly 2,500,000 kw. of new capacity went into service, the 1965 increase was the highest ever recorded in a single year and almost tripled the 1964 total of 754,000 kw. The new capacity that began service in 1965 boosted the nation's total installed generating capacity to 29,400,000 kw., 21,800,000 kw. of which was hydro and the remaining 7,600,000 kw. thermal. On the basis of present estimates, almost 1,800,000 kw. of new generating capacity will go into service in 1966, 883,000 kw. of this in hydro plants and 875,000 kw. in thermal stations. Including the new capacity scheduled for 1966, Canada's power producers have under construction or have scheduled a total of 16,500,000 kw. which will come into service within the next few years, of which hydro capacity will account for 9,700,000 kw. and thermal the remaining 6,800,000 kw. These estimates, however, do not include the vast water power potential that may eventually be developed on the Churchill River in Labrador, the Nelson River in Manitoba or the Columbia River in British Columbia.

**Atlantic Provinces.**—In *Newfoundland*, the Bay d'Espoir hydro site under development by the Newfoundland and Labrador Power Commission is designed for six units, three of which are scheduled for service in March 1967; total eventual generating capacity at Bay d'Espoir is expected to be 459,000 kw. In 1965, the Commission built 11 small thermal plants with capacities ranging from 80 kw. to 300 kw., adding 1,900 kw. to the province's thermal capacity. The new 12,500-kw. gas turbine plant being built by the Commission at Holyrood is expected to be in service in September 1966. Development of the immense hydro potential of Churchill Falls on the Churchill River in Labrador awaits completion of marketing negotiations. For full development of the 1,040-foot fall, Churchill Falls Power Corporation Limited proposes an installation of ten units with a total generating capacity of 3,914,000 kw.

In *Nova Scotia*, the Nova Scotia Light and Power Company Limited steam plant at Tuft's Cove began operation in 1965 with one 100,000-kw. unit, the first in a multi-unit development that may eventually provide more than 500,000 kw. of generating capacity. The Company has under consideration the development of two sites expected to yield a combined total of 16,200 kw. of hydro capacity—at Lequille (11,200 kw.) on the Allain (Lequille) River and at Alpena (5,000 kw.) on the Nictaux River. Capacity of the Nova Scotia Power Commission's hydro plant at Weymouth Falls on the Sissiboo River will be more than doubled by the addition of a 10,400-kw. unit in November 1967, bringing the plant capacity to 19,400 kw. Two hydro sites are being considered for development by the Commission—Wreck Cove on Wreck Cove Brook is proposed for development to a capacity of 67,500 kw. and Riverdale on the Sissiboo River to a capacity of 6,000 kw.; neither development has yet been scheduled. Electric power and steam supply for the Glace Bay heavy-water plant will be supplied from the Seaboard Power Corporation Glace Bay thermal station. To take care of the additional load, the Glace Bay station has been extended to house a new 38,000-kw. steam unit. A new single-unit thermal plant with a generating capacity of 3,750 kw. was put into operation at Dartmouth by Imperial Oil Limited.

In *New Brunswick*, the new Sisson hydro plant built by New Brunswick Electric Power Commission on the Tobique River was commissioned in 1965; its capacity is 10,000

kw. in one unit. Development of the Mactaquac site on the St. John River was proceeding on schedule and the first three 100,000-kw. units should be in operation early in 1968; Mactaquac is designed for six 100,000-kw. units, all of which will be in service by 1976. The Commission increased the capacity of its Courtenay Bay steam plant at East Saint John to 63,365 kw. by the addition of a 13,365-kw. unit and further boosts of 110,000 kw. each are scheduled for 1966 and 1967, respectively. In May 1965, the Maine and New Brunswick Electric Power Company Limited installed a 20,800-kw. unit at the Tinker hydro plant on the Aroostook River, bringing the total installed generating capacity to 30,840 kw.

**Quebec.**—In 1965, Quebec's extensive program of power-plant construction added 905,000 kw. of new capacity to the province's already considerable total of almost 10,000,000 kw., the new capacity consisting of 755,000 kw. hydro and 150,000 kw. thermal. A total of 451,920 kw. of new capacity, all hydro, is scheduled for 1966. On the basis of present scheduling, more than 5,250,000 kw. of new capacity, most of it hydro, should come into service in Quebec during the years 1967-74.

One of North America's most spectacular engineering projects, the harnessing of the power potential of the Manicouagan and Outardes Rivers, went ahead on schedule during 1965. The project involves the construction of seven new hydro plants on the two rivers and the installation of additional capacity at an existing station. The total amount of new generating capacity to be made available by the Manicouagan-Outardes project will be in excess of 5,500,000 kw. Manic 2, eleven miles from the mouth of the Manicouagan River, went into operation in 1965 with 635,000 kw. of generating capacity in five units; three more units will complete the development of Manic 2, two scheduled for 1966 and the third for 1967. Manic 1, the next plant scheduled to produce power on the Manicouagan, will be in service in 1966 with two units, each rated at 61,660 kw.; a third unit, which will complete the development of Manic 1, will be in service in 1967. The largest development in the Manicouagan-Outardes hydro complex is Manic 5, designed for a total generating capacity of 1,344,000 kw. in eight units. When completed, the buttressed, multi-arch dam at Manic 5 will be over 4,000 feet long and 703 feet high at the highest point above bedrock and will be one of the highest and most massive dams of its kind in the world. First power is expected in 1970 and completion of the plant in 1972. Last of the new Manicouagan plants to come into service in the current program will be Manic 3, with a total generating capacity of 1,120,000 kw. in seven units; initial service is scheduled for 1972 and complete service for 1974.

On the Outardes River, power at Outardes 4 will be generated by four 158,000-kw. units, the first three of which will be in service in 1968 and the fourth in 1969. The dam at Outardes 4 will create a reservoir with a surface area of more than 250 sq. miles. The underground powerhouse planned for Outardes 3 will house four 189,000-kw. units. Three are scheduled for initial operation in 1968 and the fourth in 1969. The Outardes 2 plant, adjacent to the existing Outardes Falls station, is due to go into service in 1968 with a total capacity of 447,000 kw. in three units.

Elsewhere in the province, Quebec Hydro is developing two sites on the Quinze Rapids reach of the Upper Ottawa River to supply power to the rapidly developing northwestern region: the Rapides-des-Îles plant is designed for four 37,300-kw. units, two scheduled for 1966, the third for 1967, with development of the fourth dependent upon the magnitude of local power demands; the First Falls plant is designed for 112,000-kw. capacity in four units, three to be installed at the rate of one a year from 1968 to 1970 and the fourth at a later unscheduled date.

The capacity of Quebec's first large thermal station, the Tracy plant near Sorel, was increased in 1965 by the addition of a second 150,000-kw. unit to bring the station capacity to 300,000 kw. Two more units are scheduled for 1967. A new steam plant equipped with two 150,000-kw. generators will come into operation in 1970 to supply power to the Gaspé region.



The year 1965 was a milestone in the history of electric power transmission in Canada. Extra-high-voltage transmission is not new in this country but in 1965, for the first time, power was carried over a transmission line at 735 kv., the highest AC voltage in commercial use anywhere in the world. The 735-kv. line commissioned in 1965 is the first of three extra-high-voltage lines built to carry power from the Manicouagan-Outardes hydro complex to demand centres in the Quebec City-Montreal area.

Manicouagan Power Company installed two 60,000-kw. units at the McCormick hydro plant on the Manicouagan River, bringing the total plant capacity to 311,250 kw. This plant will be integrated with Quebec Hydro's Manic 1 plant, now under construction, and with the Manicouagan-Outardes project.

**Ontario.**—During 1965, the power development program of The Hydro-Electric Power Commission of Ontario involved construction work on three hydro stations, four conventional thermal stations and two nuclear-electric plants. Extensions to two existing hydro stations were being planned and investigation of a number of hydro sites was continuing. The hydro stations under construction were the Harmon and Kipling stations on the Mattagami River and the Mountain Chute station on the Madawaska River; the conventional thermal plants were the Lakeview and Lambton coal-fired stations near Toronto and Sarnia, respectively, supplemented by the smaller oil-fired combustion turbine installations at the A. W. Manby station in Toronto and the Sarnia-Scott station in Sarnia; the nuclear-electric stations were the Douglas Point station on the shore of Lake Huron and the Pickering station near Toronto.

The Harmon hydro development began operation in 1965 with a generating capacity of 129,200 kw.; there is provision in the plant for two additional units. Kipling station, designed for a capacity of 125,400 kw. in two units and with provision for two additional units, was scheduled for operation in 1966. At the Mountain Chute hydro site on the Madawaska River, two units, each rated at 69,750 kw., are scheduled for service in late 1967. Ontario Hydro proposes to install additional generating capacity at Barrett Chute and Stewartville stations, both of which went into service in the 1940s on the Madawaska River downstream from Mountain Chute. At Barrett Chute the addition of two 60,000-kw. units in 1968 will bring the total capacity to 160,800 kw., and at Stewartville two 50,000-kw. units to go into operation in 1969 will increase the capacity to 161,200 kw.

Studies are being carried out to determine the feasibility of further development of the hydro potential of the Montreal and Mississagi Rivers—the first projects to be undertaken will probably be the development of the Lower Notch site and the redevelopment of the Upper Notch site, both on the Montreal River.

At Lakeview generating station on the shore of Lake Ontario, installation of the fourth 300,000-kw. unit was completed in 1965. The ultimate capacity of Lakeview will be 2,400,000 kw. in eight units, the eighth unit scheduled for service in 1968. The Lambton station, on the St. Clair River about 14 miles south of Sarnia, will house four 500,000-kw. units to come into service at the rate of one a year between 1968 and 1971. Ontario Hydro is to install a number of combustion turbine generators in southern Ontario to serve as stand-by units and to contribute to the provision of an adequate margin of reserve capacity at times of peak load, particularly during the present period of rapid load growth. Six units were purchased in 1965, four with a rated capacity of 16,320 kw. per unit for installation at the A. W. Manby Service Centre in western Metropolitan Toronto and two rated at 15,000 kw. per unit for installation at the Sarnia-Scott Transformer Station in Sarnia. The two units at Sarnia-Scott Transformer Station and two of the units at the A. W. Manby Service Centre went into operation in December 1965. Installation of the other two units at the Service Centre will be completed in 1966.

At Douglas Point Nuclear Power Station, installation and testing of the CANDU reactor were well under way at the end of 1965. The 200,000-kw. unit was expected to be

ready to deliver power to Ontario Hydro's East System in late 1966. Work continued on the site preparation for the 1,080,000-kw. Pickering nuclear-electric station, the two 540,000-kw. units being scheduled for initial operation in 1970 and 1971. The site is suitable for a larger station and additional units may be installed later.

**Prairie Provinces.**—In *Manitoba*, three 110,000-kw. units went into operation in 1965 at Manitoba Hydro's Grand Rapids hydro station on the Saskatchewan River. A fourth unit, scheduled for August 1968, will complete the planned development of the Grand Rapids site. The Federal Government has agreed in principle to participate with Manitoba in the development of the hydro potential of the lower Nelson River. The initial stage will include construction of a hydro plant at Kettle Rapids, diversion of flow from the Churchill River into the Nelson River system near Thompson, regulatory works at the outlet of Lake Winnipeg to control the level of that lake and the outflow from it, and high-voltage transmission lines from the Kettle Rapids site southwest to Winnipeg. The role of the Government of Canada will consist of the construction, financing and ownership of the main high-voltage transmission lines and the branch lines which may be built to international and provincial boundaries should markets develop.

In *Saskatchewan*, Squaw Rapids hydro plant, under development by the Saskatchewan Power Corporation on the Saskatchewan River, will reach a generating capacity of 244,000 kw. in 1966 when installation of the seventh unit is completed; an eighth unit, also rated at 43,000 kw., is scheduled for 1967. At the South Saskatchewan River Project near Outlook, first power is expected in 1968 when two 62,200-kw. generators go into service; a third unit of the same size will be added in 1969. The dam and reservoir at the project are being built by the Prairie Farm Rehabilitation Administration for irrigation purposes and power generating facilities will be installed by the Saskatchewan Power Corporation.

The Corporation is adding a 15,000-kw. gas-fired unit at the Swift Current plant to bring its total capacity to 29,550 kw. in 1966 and consideration is being given to the possibility of adding one or two more 15,000-kw. units for operation in late 1967. Contracts have been awarded for two 150,000-kw. steam turbines for Boundary Dam thermal station to be commissioned in 1969 and 1971, bringing the station's capacity to 432,000 kw.

In *Alberta*, the first unit at the Calgary Power Ltd. Big Bend hydro development on the Brazeau River went into service in 1965. The 144,000-kw. generator is driven by a turbine rated at 210,000 hp., the highest rating of any unit in service in Canada. A second unit, consisting of a 175,000-kw. generator and 250,000-hp. turbine, is scheduled for late 1966. The main plant is capable of housing four units. At the Big Bend site, water is carried to the main powerhouse by a 12-mile canal. A pumping-generating plant is incorporated at the outlet of the storage reservoir. The company's Wabamun thermal station is being extended to house a 300,000-kw. coal-burning steam unit. The new unit, installation of which should be complete in late 1967, will boost the station capacity to 582,000 kw.

Canadian Utilities Limited are installing a 150,000-kw. coal-fired steam turbo-generator at the Battle River thermal plant near Forestburg for service in 1969; existing capacity at Battle River is 66,000 kw. A 20,000-kw. gas turbine unit will be installed at Simonette for operation in October 1966. Although the company does not at present operate hydro-electric generating facilities, a study of the hydro potential of the Smoky River in the Grande Prairie area has been carried out and eight sites are under consideration for possible development. The capacities that could be installed at the eight sites vary between 60,000 kw. and 620,000 kw. A 75,000-kw. gas-fired steam turbo-generator being installed at the Edmonton thermal plant is scheduled for initial service in 1966; it will bring the plant generating capacity to 405,000 kw. The City is to build a new thermal plant housing two 165,000-kw. gas-fired units, scheduled for 1970 and 1973. Chemcell (1963) Limited expects to put a new 4,000-kw. unit into service in 1966 at its 18,000-kw. Clover Bar thermal station at Edmonton.

**British Columbia.**—Substantial progress on the British Columbia Hydro and Power Authority's Portage Mountain development on the Peace River was reported in 1965. The development is planned for ten units with a total capacity of 2,270,000 kw., three of which are scheduled for service by the autumn of 1968. Work progressed on the three storage dams being built by British Columbia Hydro and Power Authority under the terms of the Columbia River Treaty, which entitle Canada to one half the power benefits accruing in the United States from the regulation of 15,500,000 acre-feet of water to be stored in Canada behind the Duncan, Arrow and Mica Dams and one half the value of the estimated flood damage prevented in the United States through the operation of the dams for flood control. The three storage dams are required by the Treaty to be in operation in 1973. The third 150,000-kw. unit at British Columbia Hydro's Burrard thermal station went into operation in 1965, bringing the station's total capacity to 450,000 kw. and a fourth 150,000-kw. unit should be in service in September 1967. Ultimate capacity of the plant will be 900,000 kw. in six units. During the year, generating capacity was boosted at eight of the Authority's diesel stations by a combined total of 28,361 kw.

The City of Revelstoke added a second 4,000-kw. unit at the Walter Hardman hydro plant in 1965, bringing the plant capacity to 8,000 kw. The fourth and final unit at the Cominco Ltd. Waneta hydro station on the Pend d'Oreille River will be in operation in 1966; the new unit, rated at 76,000 kw., will increase the station capacity to 292,000 kw. A 34,560-kw. turbo-generator being installed by Columbia Cellulose Company Limited for 1966 operation at the bleached-kraft mill at Watson Island near Prince Rupert will supply electric power from process steam. MacMillan, Bloedel and Powell River Limited have ordered a 30,000-kw. steam turbo-generator for the 14,925-kw. Powell River plant, to be in service in late 1966. Capacity of the Alco Ltd. Kemano hydro station will be boosted to 812,800 kw. in 1967 with the addition of an eighth unit, rated at 105,600 kw.

**Yukon and Northwest Territories.**—In 1965, Northern Canada Power Commission commissioned its Twin Gorges hydro plant on the Taltson River, 35 miles northeast of Fort Smith, N.W.T. This plant has an installed capacity of 18,000 kw. in one unit and is the largest hydro station in the Territories. A total of 1,610 kw. of new thermal capacity was added in 1965 at various locations in the Northwest Territories and 120 kw. in Yukon Territory.

### Section 3.—Power Generating Capability and Load Requirements

Power generating *capability*, as covered in this Section, is the measurement of the available generating resources of all hydro and thermal facilities at the time of the one-hour firm peak load for each reporting company, and is not equal to the *capacity* of such generating facilities. For example, a hydro plant may have a capacity of 100,000 kw. but if, at the time of peak load, the water available for generation is only 80 p.c. of the plant capacity requirements, then its capability is 80,000 kw.

Total generating capability has grown at a rapid rate since 1955. The annual rate of increase was 7.2 p.c. in the ten-year period 1955-65 and 5.6 p.c. in the four-year period 1961-65. In comparison, the forecast rate of growth for the years 1966-70 is 7.4 p.c.; thermal generating capability is expected to grow at an average rate of 13.5 p.c. a year in the forecast period compared with 13.8 p.c. in the period 1955-65 but hydro-electric capability is expected to increase at 5.0 p.c. a year compared with 5.7 p.c. in the 1955-65 period. This increased rate of growth in hydro generating capability in the forecast period is attributable to the large power projects under construction in relatively remote areas which will be completed within the next few years.

Among the provinces, Quebec has the largest generating capability, followed by Ontario, British Columbia and Alberta. Quebec also has the largest hydro-electric gener-



ating capability, followed by Ontario and British Columbia, but Ontario has the largest thermal capability, followed by Alberta and British Columbia. The first nuclear capability is scheduled in Ontario for late 1966.

The largest absolute growth in generating capability for the forecast years is indicated for Ontario amounting to 4,450,000 kw., followed by Quebec 3,269,000 kw., British Columbia 1,544,000 kw. and New Brunswick 621,000 kw. Ontario will meet most of its increased generating capability by adding 3,921,000 kw. in thermal capability and 529,000 kw. in hydro capability, the former including 700,000 kw. nuclear. Quebec will add 2,928,000 kw. hydro and 341,000 thermal and British Columbia 1,308,000 kw. hydro and 236,000 kw. thermal. Thus, it is apparent that thermal capability is becoming of greater importance, partly because of decreasing availability of hydro resources in provinces such as Ontario and partly because technological advances have made possible much more efficient use of thermal fuels in the operation of thermal base load plants.

*Firm power peak load* is the measure of the maximum average net kilowatt demand of one-hour duration from all loads, including commercial, residential, farm and industrial consumers as well as the line losses. Such load demand increased at the rate of 6.9 p.c. a year from 1955 to 1965 and 7.2 p.c. a year from 1961 to 1965; peak load demand is forecast to increase at the average rate of 7.6 p.c. a year in the period 1966-70. As a result of the rapid increase in generating capability and the somewhat slower but steady increase in the peak loads, together with the slight reduction in deliveries of firm power to the United States, the indicated reserve on net generating capability increased each year from 1955 to 1965, with the exception of 1961, 1963 and 1964. The forecast is for increases from 1966 to 1970 with the exception of 1966. The reserve ratio as a percentage of firm power peak load, which reached a high of 28.2 p.c. in 1960, is expected to decrease to 15.8 p.c. in 1970.

### 3.—Net Generating Capability, by Province, 1965

(Thousand kilowatts)

Province or Territory	Type of Generating Facility				Total
	Hydro-Electric	Thermal-Electric			
		Steam	Internal Com-bustion	Gas Turbine	
Newfoundland.....	446	45	11	—	502
Prince Edward Island.....	—	51	7	—	58
Nova Scotia.....	141	482	3	—	626
New Brunswick.....	260	310	7	—	577
Quebec.....	10,208	361	13	36	10,618
Ontario.....	5,548	2,885	7	74	8,514
Manitoba.....	1,056	291	9	—	1,356
Saskatchewan.....	309	535	35	41	920
Alberta.....	490	750	24	131	1,395
British Columbia.....	2,692	643	115	177	3,627
Yukon and Northwest Territories.....	64	1	15	1	81
Canada.....	21,214	6,354	246	460	28,274

## 4.—Capacity and Firm Power Peak Load Requirements, Actual 1951 and 1959-65 and Forecast 1966-70

(Thousand kilowatts)

Item	Actual								Forecast				
	1951	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
<b>Net Generating Capability—</b>													
Hydro-electric.....	9,044	17,086	18,516	18,389	18,651	19,666	19,964	21,214	22,211	22,957	25,277	26,310	27,126
Steam—Conventional.....				3,773	4,566	5,104	5,422	6,354	7,013	8,298	8,980	10,689	11,462
Nuclear.....				—	—	—	—	—	—	200	200	200	700
Internal combustion.....	1,032	3,119	3,824	240	251	236	255	246	252	252	252	252	253
Gas turbine.....				351	371	382	384	460	696	830	830	830	903
<b>Totals, Net Generating Capability.....</b>	<b>10,076</b>	<b>20,205</b>	<b>22,340</b>	<b>22,753</b>	<b>23,869</b>	<b>25,478</b>	<b>26,025</b>	<b>28,274</b>	<b>30,172</b>	<b>32,537</b>	<b>35,539</b>	<b>38,281</b>	<b>40,444</b>
Receipts of firm power from United States.....	—	—	—	2	4	2	2	—	—	—	—	—	—
Deliveries of firm power to United States.....	175	152	166	146	121	122	121	89	91	92	93	95	97
<b>Totals, Net Capability.....</b>	<b>9,901</b>	<b>20,053</b>	<b>22,174</b>	<b>22,609</b>	<b>23,752</b>	<b>25,358</b>	<b>25,906</b>	<b>28,185</b>	<b>30,081</b>	<b>32,445</b>	<b>35,446</b>	<b>38,186</b>	<b>40,347</b>
<b>Peak Loads—</b>													
Firm power peak loads within Canada.....	8,989	16,201	17,264	18,353	18,972	20,755	22,506	24,205	26,024	28,841	30,689	32,944	34,821
Indicated shortages.....	321	—	—	—	—	28	13	—	—	—	—	—	—
<b>Totals, Indicated Peak Loads within Canada</b>	<b>9,310</b>	<b>16,201</b>	<b>17,264</b>	<b>18,353</b>	<b>18,972</b>	<b>20,783</b>	<b>22,519</b>	<b>24,205</b>	<b>26,024</b>	<b>28,841</b>	<b>30,689</b>	<b>32,944</b>	<b>34,821</b>
<b>Indicated Reserve.....</b>	<b>591</b>	<b>3,852</b>	<b>4,910</b>	<b>4,256</b>	<b>4,780</b>	<b>4,575</b>	<b>3,387</b>	<b>3,980</b>	<b>3,157</b>	<b>3,604</b>	<b>4,757</b>	<b>5,242</b>	<b>5,526</b>

## Section 4.—Electric Power Statistics

Electric power statistics presented in this Section are based on reports of all electrical utilities and all industrial establishments that generate energy regardless of whether or not any is sold and therefore show the total production and distribution of electric energy in Canada. Utilities are defined as companies, commissions, municipalities or individuals whose primary function is to sell most of the electric energy that they have either generated or purchased. Industrial establishments are defined as companies or individuals that generate electricity mainly for use in their own plants.

The current series of electric power statistics dates back to 1956. Earlier reports, entitled *Central Electric Stations*, were concerned solely with the electrical utility industry and hence excluded statistics relating to power produced by industrial establishments for their own use, although power sold by such establishments was included.

The figures of total water and thermal power generated for the years 1951-55 shown in Table 5 are compiled on the old basis, figures for 1956 are shown on both bases for comparative purposes, and those for later years are on the new basis.

## 5.—Electric Energy Generated, by Type of Station 1951-64, and by Province 1963 and 1964

Year and Province or Territory	Generated by—		Total	Year and Province or Territory	Generated by—		Total
	Water Power	Thermal Power			Water Power	Thermal Power	
	'000 kwh.	'000 kwh.	'000 kwh.		'000 kwh.	'000 kwh.	'000 kwh.
1951.....	52,955,002	1,896,842	54,851,844	1958.....	90,509,200	6,975,089	97,484,289
1952.....	57,023,530	2,385,668	59,409,198	1959.....	97,039,830	7,588,653	104,628,483
1953.....	58,926,462	3,934,465	62,860,927	1960.....	105,882,773	8,495,160	114,377,933
1954.....	62,572,316	3,364,124	65,936,440	1961.....	103,919,241	9,794,077	113,713,318
1955.....	69,478,003	3,432,589	72,910,592	1962.....	104,050,724	13,418,024	117,468,748
1956.....	73,524,583	4,479,770	78,004,353	1963.....	102,831,866	18,406,328	122,238,194
1956 <sup>1</sup> .....	81,839,968	6,543,333	88,383,301	1964.....	113,343,948	21,642,799	134,986,747
1957.....	83,373,220	7,668,860	91,042,080				
<b>1963</b>				<b>1964</b>			
Nfld.....	1,946,874	122,730	2,069,604	Nfld.....	2,294,853	129,233	2,424,086
P.E.I.....	—	111,140	111,140	P.E.I.....	—	123,982	123,982
N.S.....	804,913	1,331,015	2,135,928	N.S.....	722,426	1,680,199	2,402,625
N.B.....	1,279,307	1,031,449	2,310,756	N.B.....	1,023,516	1,532,275	2,555,791
Que.....	49,555,200	378,572	49,933,772	Que.....	56,362,217	469,884	56,832,101
Ont.....	29,139,855	8,469,207	37,609,062	Ont.....	30,186,345	9,538,890	39,725,235
Man.....	4,737,458	117,751	4,855,209	Man.....	4,800,712	190,451	4,991,163
Sask.....	988,978	2,002,398	2,991,376	Sask.....	1,369,211	1,969,968	3,339,179
Alta.....	881,167	3,650,078	4,531,245	Alta.....	895,860	4,130,987	5,026,847
B.C.....	14,297,833	1,163,035	15,460,868	B.C.....	15,480,140	1,832,531	17,312,671
Yukon and N.W.T.....	200,281	38,953	239,234	Yukon and N.W.T.....	208,668	44,399	253,067
<b>Canada, 1963</b>	<b>103,831,866</b>	<b>18,406,328</b>	<b>122,238,194</b>	<b>Canada, 1964</b>	<b>113,343,948</b>	<b>21,642,799</b>	<b>134,986,747</b>

<sup>1</sup> New series, see immediately preceding text.

Of the total generation in 1964 of 134,986,747,000 kwh., 84.0 p.c. was produced from water power and 16.0 p.c. was generated thermally; the proportions differed somewhat among provinces as shown in the following statement.

Province	Hydro	Thermal	Province or Territory	Hydro	Thermal
	p.c.	p.c.		p.c.	p.c.
Newfoundland.....	94.6	5.4	Ontario.....	76.0	24.0
Prince Edward Island....	—	100.0	Manitoba.....	96.2	3.8
Nova Scotia.....	30.1	69.9	Saskatchewan.....	41.0	59.0
New Brunswick.....	40.0	60.0	Alberta.....	17.8	82.2
Quebec.....	99.2	0.8	British Columbia.....	89.4	10.6
			Yukon and N.W.T.....	82.5	17.5



Table 6 gives summary figures of power production and distribution classified by province, and Tables 7 and 8 give figures classified by type of production establishment. Total installed capacity in Canada amounted to 27,027,347 kw. in 1964, an increase of 726,703 kw. over 1963. Of the 1964 total, 21,890,953 kw. were accounted for by utilities and the remainder by industrial establishments. During 1963 and 1964, total sales to ultimate customers amounted to 89,209,338,000 kwh. and 82,344,157,000 kwh.,\* respectively, of which 97.2 p.c. and 99.1 p.c., respectively, was sold by utilities.

Sales to power customers made up 58.4 p.c. of the total in 1963 and 50.9 p.c. in 1964, sales to domestic and farm customers were 28.4 p.c. and 33.1 p.c., and commercial sales 12.2 p.c. and 14.8 p.c. in the respective years. Exports to the United States in 1964 amounted to 4,159,475,000 kwh. compared with 3,612,834,000 kwh. in 1963.

\* Sales to industrial establishments with generating facilities are included in 1963 but excluded in 1964; in the later year they amounted to 14,666,303,000 kwh.

#### 6.—Summary Electric Power Statistics, by Province, 1963 and 1964

Year and Province or Territory	Installed Generating Capacity	Energy Made Available in Canada	Exported to U.S.A.	Ultimate Customers <sup>1</sup>	Total Revenue from Ultimate Customers <sup>2</sup>	Electrical Utilities	
						Employees	Salaries and Wages
	kw.	'000 kwh.	'000 kwh.	No.	\$'000	No.	\$'000
<b>1963</b>							
Newfoundland.....	513,047	1,998,398	—	77,933	16,111	762	2,973
Prince Edward Island..	57,391	111,140	—	24,466	3,333	172	735
Nova Scotia.....	530,198	2,122,193	—	213,361	34,476	1,648	6,952
New Brunswick.....	530,925	2,115,007	246,872	162,751	26,453	1,607	5,470
Quebec.....	9,567,017	44,832,194	24,781	1,527,615	256,536	11,145	60,432
Ontario.....	8,456,493	42,077,647	3,316,979	2,116,952	361,193	16,266	94,700
Manitoba.....	1,090,097	5,654,223	15	298,436	47,181	2,631	13,655
Saskatchewan.....	866,841	2,379,273	—	276,397	46,615	2,270	13,131
Alberta.....	1,163,643	4,560,283	—	396,430	65,913	1,861	10,443
British Columbia.....	3,461,074	15,419,951	24,187 <sup>3</sup>	554,624	104,498	2,720	16,363
Yukon and N.W.T.....	63,918	239,234	—	5,889	3,853	262	1,448
<b>Canada, 1963.....</b>	<b>26,300,644</b>	<b>121,509,643</b>	<b>3,612,834</b>	<b>5,654,854</b>	<b>966,162</b>	<b>41,344</b>	<b>226,302</b>
<b>1964</b>							
Newfoundland.....	512,960	2,239,026	—	80,106	18,581	772	2,717
Prince Edward Island..	57,491	123,982	—	25,164	3,725	180	786
Nova Scotia.....	532,929	2,325,471	—	216,039	34,752	1,653	7,516
New Brunswick.....	536,368	2,418,842	245,217	166,292	27,206	1,492	6,000
Quebec.....	9,838,392	49,895,132	47,463	1,596,565	245,597	12,446	72,213
Ontario.....	8,751,608	45,535,804	3,838,756	2,172,169	355,647	16,706	101,075
Manitoba.....	1,079,291	5,788,304	—	313,483	47,533	2,593	13,442
Saskatchewan.....	967,552	2,750,782	—	286,302	49,678	2,348	12,594
Alberta.....	1,250,705	5,049,708	—	408,275	69,932	1,911	11,049
British Columbia.....	3,432,549	17,468,383	28,039 <sup>4</sup>	581,968	106,417	2,808	17,251
Yukon and N.W.T.....	67,502	253,067	—	6,319	4,302	296	1,637
<b>Canada, 1964.....</b>	<b>27,027,347</b>	<b>133,948,501</b>	<b>4,159,475</b>	<b>5,852,783</b>	<b>963,340</b>	<b>43,205</b>	<b>247,280</b>

<sup>1</sup> Figures for 1963 include industrial establishments that purchase power and have generating facilities; 1964 figures exclude such establishments of which there were 122 in that year.

<sup>2</sup> Figures for 1963 include revenue from sales to industrial establishments with generating facilities; 1964 figures exclude such revenue which amounted to \$66,475,000 in that year.

<sup>3</sup> Includes 22,304,000 kwh. of 'no value' energy.

<sup>4</sup> Includes 25,860,000 kwh. of 'no value' energy.

## 7.—Summary Electric Power Statistics, by Type of Establishment, 1963 and 1964

Year and Item	Electrical Utilities			Industrial Establishments	Total
	Publicly Operated	Privately Operated	Total		
1963					
Installed generator capacity..... kw.	18,640,811	2,559,306	21,200,117	5,100,527	26,300,644
Energy generated..... '000 kwh.	81,996,546	11,504,680	93,501,226	28,736,968	122,238,194
Hydro..... "	69,667,658	8,445,103	78,112,761	25,719,105	103,831,866
Thermal..... "	12,328,888	3,059,577	15,388,465	3,017,863	18,406,328
Energy Made Available in Canada.. '000 kwh.	..	..	..	..	121,509,643
Disposal of energy in Canada..... '000 kwh.	86,583,184	10,129,883	96,713,067	24,796,576 <sup>1</sup>	121,509,643 <sup>1</sup>
Energy exported to United States.... "	2,782,096	683,568	3,465,664	147,170	3,612,834
Ultimate customers in Canada..... No.	5,086,798	559,748	5,646,546	8,308	5,654,854
Domestic and farm..... "	4,493,729	473,723	4,967,452	7,614	4,975,066
Commercial..... "	507,930	67,357	575,287	642	575,929
Power..... "	79,004	17,733	96,737	37	96,774
Street lighting..... "	6,135	935	7,070	15	7,085
Revenue from ultimate customers... \$'000	845,745	112,530	958,275	7,887	966,162
Revenue from exports to United States "	3,039	2,779	5,818	835	6,653
Employees..... No.	36,768	4,576	41,344	..	..
Salaries and wages..... \$'000	203,413	22,889	226,302	..	..
1964					
Installed generator capacity..... kw.	19,299,850	2,591,103	21,890,953	5,136,394	27,027,347
Energy generated..... '000 kwh.	90,254,074	12,635,008	102,889,082	32,097,665	134,986,747
Hydro..... "	76,006,973	8,864,514	84,871,487	28,472,461	113,343,948
Thermal..... "	14,247,101	3,770,494	18,017,595	3,625,204	21,642,799
Energy Made Available in Canada.. '000 kwh.	..	..	..	..	133,948,501
Disposal of energy in Canada..... '000 kwh.	84,164,361 <sup>2</sup>	9,274,531 <sup>2</sup>	93,438,892 <sup>2</sup>	40,509,609 <sup>2</sup>	133,948,501
Energy exported to United States.... "	2,785,481	1,212,982	3,998,463	161,012	4,159,475
Ultimate customers in Canada..... No.	5,322,330	521,412	5,843,742	9,041 <sup>3</sup>	5,852,783 <sup>3</sup>
Domestic and farm..... "	4,702,941	439,648	5,142,589	8,301	5,150,890
Commercial..... "	543,724	65,273	608,997	691	609,688
Power..... "	69,774	15,628	85,402	35	85,437
Street lighting..... "	5,891	863	6,754	14	6,768
Revenue from ultimate customers... \$'000	849,815	109,113	958,928	4,412 <sup>4</sup>	963,340 <sup>4</sup>
Revenue from exports to United States "	3,977	4,643	8,620	1,300	9,920
Employees..... No.	38,944	4,261	43,205	..	..
Salaries and wages..... \$'000	225,505	21,775	247,280	..	..

<sup>1</sup> Of this amount, 22,194,983,000 kwh. was generated for use within own plant and the remainder sold to ultimate customers; excludes amount received from utilities.

<sup>2</sup> Excludes sales to industrial establishments with generating facilities, totalling 14,666,303,000 kwh.

<sup>3</sup> Excludes industrial establishments that purchase power and that have generating facilities.

<sup>4</sup> Excludes sales to industrial establishments with generating facilities, amounting to \$66,475,000.

### 8.—Electric Power Generated classified by Type of Establishment, by Province, 1963 and 1964

Year and Province or Territory	Electrical Utilities		Industrial Establishments	Total
	Publicly Operated	Privately Operated		
	'000 kwh.	'000 kwh.	'000 kwh.	'000 kwh.
<b>1963</b>				
Newfoundland.....	16,964	1,604,452	448,188	2,069,604
Prince Edward Island.....	8,750	102,390	—	111,140
Nova Scotia.....	768,937	1,115,602	251,389	2,135,928
New Brunswick.....	1,612,123	71,150	627,483	2,310,756
Quebec.....	29,730,023	3,439,290	16,764,459	49,933,772
Ontario.....	34,328,096	1,173,913	2,107,053	37,609,062
Manitoba.....	4,785,458	—	69,751	4,855,209
Saskatchewan.....	2,221,903	653,092	116,381	2,991,376
Alberta.....	1,277,686	2,863,636	389,923	4,531,245
British Columbia.....	7,078,290	463,522	7,909,056	15,450,868
Yukon and Northwest Territories.....	168,316	17,633	53,285	239,234
<b>Canada, 1963.....</b>	<b>81,996,546</b>	<b>11,504,680</b>	<b>28,736,968</b>	<b>122,238,194</b>
<b>1964</b>				
Newfoundland.....	18,717	1,942,800	462,569	2,424,086
Prince Edward Island.....	5,396	118,586	—	123,982
Nova Scotia.....	808,076	1,329,509	265,040	2,402,625
New Brunswick.....	1,855,446	52,084	648,261	2,555,791
Quebec.....	34,663,652	3,489,179	18,679,270	56,832,101
Ontario.....	35,961,237	1,288,474	2,475,524	39,725,235
Manitoba.....	4,914,858	—	76,305	4,991,163
Saskatchewan.....	2,535,228	616,608	137,343	3,339,179
Alberta.....	1,352,286	3,293,183	381,378	5,026,847
British Columbia.....	7,906,670	484,619	8,921,382	17,312,671
Yukon and Northwest Territories.....	182,508	19,966	50,593	253,067
<b>Canada, 1964.....</b>	<b>90,254,074</b>	<b>12,635,008</b>	<b>32,097,665</b>	<b>134,986,747</b>

Average domestic and farm consumption rose from 5,084 kwh. in 1963 to 5,296 kwh. in 1964. Among the provinces, the averages in 1964 varied from a low of 2,192 kwh. in Prince Edward Island to a high of 6,919 kwh. in Manitoba. For domestic and farm customers the average annual bill was \$77.89 in 1964 as against \$77.10 in 1963, an increase of 1.0 p.c.

Although many utilities do not keep records on farm customers separate from other domestic customers, the data reported on farm service indicate that the average consumption rose from 5,985 kwh. per customer in 1963 to 6,361 kwh. in 1964 and the average bill from \$117.16 to \$118.54.

### 9.—Domestic and Farm Service by Electric Utilities and Industrial Establishments, 1960-64

Item	1960	1961	1962	1963	1964
Customers..... No.	4,542,780	4,716,819	4,864,464	4,980,351	5,150,890
Kilowatt-hours sold..... '000	20,391,857	21,979,672	23,704,259	25,321,606	27,277,574
Revenue received..... \$'000	325,946	346,807	365,990	383,983	401,194
Kilowatt-hours per customer..... No.	4,489	4,660	4,873	5,084	5,296
Average annual bill..... \$	71.75	73.53	75.24	77.10	77.89
Revenue per kwh..... cts.	1.60	1.58	1.54	1.52	1.47



In 1964, natural gas accounted for 18.8 p.c. of thermal generation by utilities, coal for 70.5 p.c., petroleum fuels for 9.9 p.c. and nuclear fuel for 0.8 p.c.; corresponding proportions in 1963 were 22.4 p.c., 68.9 p.c., 8.1 p.c. and 0.6 p.c., respectively.

#### 10.—Fuel Used by Electrical Utilities to Generate Power, by Province, 1963 and 1964

Year and Province or Territory	Coal		Petroleum Fuels		Gas	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$	Imp. gal.	\$	Mcf.	\$
<b>1963</b>						
Newfoundland.....	—	—	5,932,462	636,219	—	—
Prince Edward Island.....	—	—	9,571,919	636,868	—	—
Nova Scotia.....	533,839	5,574,994	9,249,872	701,454	—	—
New Brunswick.....	106,812	989,556	22,082,760	1,476,606	—	—
Quebec.....	—	—	3,108,232	601,732	—	—
Ontario.....	2,807,380	25,797,887	5,449,112	876,222	128,815	49,026
Manitoba.....	66,336	254,673	5,627,957	948,595	154,618	25,417
Saskatchewan.....	1,053,750	2,079,238	21,610,718	1,247,389	11,158,712	1,700,110
Alberta.....	582,062	974,781	5,007,788	384,712	32,508,907	4,814,023
British Columbia.....	—	—	7,342,059	1,237,504	3,156,423	832,928
Yukon and Northwest Territories...	—	—	2,168,776	547,526	—	—
<b>Canada, 1963.....</b>	<b>5,150,179</b>	<b>35,671,129</b>	<b>97,151,655</b>	<b>9,294,927</b>	<b>47,107,475</b>	<b>7,421,504</b>
<b>1964</b>						
Newfoundland.....	—	—	7,432,514	664,620	—	—
Prince Edward Island.....	—	—	10,778,394	695,493	—	—
Nova Scotia.....	584,141	5,994,515	26,222,642	1,768,259	—	—
New Brunswick.....	245,282	2,125,655	33,760,450	2,235,371	—	—
Quebec.....	—	—	7,763,263	1,015,757	—	—
Ontario.....	3,080,699	27,986,075	5,552,981	919,678	186,799	73,242
Manitoba.....	145,200	576,460	3,811,292	647,077	280,258	41,810
Saskatchewan.....	1,108,755	2,005,334	19,755,519	1,201,884	9,522,089	1,541,455
Alberta.....	1,100,443	1,492,912	6,227,934	439,365	28,088,982	4,458,421
British Columbia.....	—	—	11,599,622	1,842,914	6,050,986	1,874,408
Yukon and Northwest Territories...	—	—	2,888,483	914,783	—	—
<b>Canada, 1964.....</b>	<b>6,264,520</b>	<b>40,180,951</b>	<b>135,793,094</b>	<b>12,345,201</b>	<b>44,129,114</b>	<b>7,989,336</b>

### Section 5.—Public Ownership and Regulation of Electrical Utilities

Federal Government regulation of electrical utilities, particularly with respect to the export of electric power and the construction of lines over which such power is exported, falls within the jurisdiction of the National Energy Board established in November 1959 and concerned with all matters relating to energy resources within the jurisdiction of the Parliament of Canada (see Domestic Trade Chapter XXI, Part II, Section 4 for a brief survey of the functions and operations of the National Energy Board).

Power is generated in Canada by publicly and privately operated utilities and by industrial establishments. Table 8, p. 654, giving statistics by type of establishment, shows that 67 p.c. of the total electric power generated in 1964 was produced by publicly operated utilities, 9 p.c. by privately operated utilities and 24 p.c. by industrial establishments. However, ownership differs greatly in different areas of the country. Quebec output until recently was predominantly from privately owned plants and in Ontario almost all electric power is produced by a publicly owned utility. Figures for 1962 and

subsequent years will show a much greater proportion of publicly operated electrical utilities since they will reflect the recent provincial take-over of privately owned facilities in both British Columbia and Quebec.

Because of the absence of free market determination of prices and regulation of services in an industry that is semi-monopolistic, regulation of electrical utilities has been attempted in most provinces. Neither Newfoundland nor Prince Edward Island has a provincially operated electric power system, although in the former province a Commission, known as the Newfoundland Power Commission, was established by the provincial government in 1954 for the purpose of supplying electric power wherever needed throughout the province, particularly to rural areas. In Prince Edward Island, the town of Summerside and surrounding area is served by the municipally operated Town of Summerside Electric Light Department. The functions and activities of provincially operated electric power commissions in the other provinces are summarized in the following paragraphs.

**Nova Scotia.**—The Nova Scotia Power Commission was created under the Power Commission Act of 1919 with the function of supplying electric power and energy by the most economical means available. The Rural Electrification Act of 1937 greatly increased the possibilities for retail service by providing financial assistance to equalize cost and revenue of extensions approved by the Governor in Council. In 1941 an amendment to the Power Commission Act authorized the Commission, subject to the approval of the Governor in Council, to regulate and control the generation, transmission, distribution, supply and use of power in the province. Certain investigatory work is carried on in the province by the Federal Government in close association with the Commission, but the control of water resources is vested in the Crown and administered under the provisions of the Nova Scotia Water Act, 1919. The Commission pays regular fees for water rights.

The territory of the Commission extends over the entire province and embraces six systems which include 25 generating stations and more than 5,243 miles of transmission and distribution lines. Installed capacity at the end of 1965 was 184,458 kw. of which 96,708 kw. was hydro capacity. New power plant construction under way in Nova Scotia during 1965 is outlined on p. 644. Financially, the Commission is self-supporting, repaying borrowings from revenue. The balance sheet at Nov. 30, 1965 showed total fixed assets of \$94,119,856, including work in progress amounting to \$13,654,064.

# 11.—Capacity and Output of the Nova Scotia Power Commission, Year Ended Nov. 30, 1965

System <sup>1</sup> and First Year of Operation	Present Installed Capacity	Output	System <sup>1</sup> and First Year of Operation	Present Installed Capacity	Output
	kw.	kwh.		kw.	kwh.
<b>Western Network—</b>			<b>St. Margaret (1921).....</b>	<b>10,400</b>	<b>24,892,000</b>
Harmony (1943).....	600	2,496,000	<b>Mersey—</b>		
Roseway (1930).....	888	2,352,750	Original development		
Gulch (1952).....	6,000	16,550,827	(1928).....	21,780	92,568,000
Ridge (1957).....	4,000	7,156,426	Cowie Falls (1938).....	7,200	33,069,200
Portable (diesel).....	200	100	Deep Brook (1950).....	9,000	37,493,600
Sissiboo (1960).....	6,000	18,443,000	Lower Great Brook (1955)...	4,500	16,308,730
Weymouth (1961).....	9,000	27,485,840	Canseau (diesel) (1937).....	700	93,740
<b>Eastern Network—</b>			Tusket (1929).....	2,160	8,666,703
Barrie Brook (1940).....	360	1,409,380	<b>Cumberland—</b>		
Dickie Brook (1948).....	3,800	8,265,560	Maccan (thermal) (1927)...	26,850	94,908,500
Malay Falls (1924).....	3,600	8,379,394			
Ruth Falls (1925).....	6,970	26,083,240			
Liscomb (1957).....	450	2,477,092			
Trenton (thermal) (1951)...	60,000	294,567,700			
			<b>Totals.....</b>	<b>184,458</b>	<b>723,667,792</b>

<sup>1</sup> Hydro unless otherwise noted.

**New Brunswick.**—The New Brunswick Electric Power Commission was incorporated under the Electric Act, 1920. Generating stations owned by the Commission at Mar. 31, 1966 were as follows:—

<u>Plant</u>	<u>Type</u>	<u>Capacity</u>	<u>Plant</u>	<u>Type</u>	<u>Capacity</u>
		kw.			kw.
Grand Falls.....	Hydro	63,000	Grand Lake.....	Steam	101,250
Musquash.....	Hydro	6,960	Saint John (Dock St.)..	Steam	16,000
Tobique.....	Hydro	20,000	Chatham.....	Steam	32,500
Beechwood.....	Hydro	112,500	Grand Manan.....	Diesel	1,650
Milltown.....	Hydro	3,036			
Sisson.....	Hydro	10,000	<b>TOTAL CAPACITY.....</b>		<b>430,261</b>
Courtenay Bay.....	Steam	63,365			

All the above generating units with the exception of Grand Manan are interconnected in a province-wide grid system. The statistical information given in Table 12 shows the growth of the Commission's undertakings since 1962. Power plant construction under way in New Brunswick during 1965 is outlined at pp. 644-645.

**12.—Growth of the New Brunswick Electric Power Commission, Years Ended Mar. 31, 1962-66**

<u>Item</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>
High-voltage transmission line... miles	1,744	1,845	1,947	2,093	2,255
Distribution line.....	7,996	8,390	8,447	8,528	8,586
Direct customers..... No.	107,415	117,073	118,443	121,036	124,030
Plant capacities..... kw.	307,886	348,736	406,636	419,761	430,261
Power generated (incl. purchases) kwh.	1,425,489,140	1,644,740,890	1,797,928,340	2,207,165,360	2,571,484,730
Capital invested..... \$	156,190,514	170,859,403	184,956,439	205,192,238	247,896,370
Revenue..... \$	20,309,856	22,591,554	24,650,853	29,244,088	33,108,342

**Quebec.**—*Stream and Reservoir Control.*—The Quebec Streams Commission was created in 1910 (SQ 1910, c. 5) and given additional powers in 1912 (RSQ 1925, c. 46) and 1930 (SQ 1930, c. 34); it was authorized to ascertain the water resources of the province, to make recommendations regarding their control and to construct and operate certain storage dams to regulate the flow of streams. On Apr. 1, 1955, the Commission was abolished and its powers and attributions transferred to the Hydraulic Resources Department, now the Department of Natural Resources. The rivers controlled by the Commission at the time of transfer, either by means of dams on the rivers or by regulating the outflow of lakes at the headwaters, were: the St. Maurice, the Gatineau, the Lièvre, the St. Francis, the Chicoutimi, the Au Sable and the Métis. The Commission also operated nine reservoirs on the North River, two in the watershed of the Ste. Anne de Beaupré River and one at the outlet of Lake Morin on Rivière du Loup (lower). In 1965, eleven auxiliary reservoirs on the St. Maurice System and two on the Gatineau were turned over by the Department of Natural Resources to the Quebec Hydro-Electric Commission for operation and maintenance.

Storage reservoirs otherwise controlled or operated are: the Lake St. John, the Lake Manouane and Passe Dangereuse on the Peribonca River controlled by the Aluminum Company of Canada; the Onatchiway on the Shipshaw River controlled by Price Brothers and Company Limited; Memphremagog Lake on the Magog River controlled by the Dominion Textile Company; and Témiscamingue and Quinze Lakes on the Ottawa River controlled by the federal Department of Public Works. Storage reservoirs under the control of the Quebec Hydro-Electric Commission are: Témiscouata Lake on the Mada-



waska River, Kipawa Lake on the Ottawa River, Lac Dozois on the upper Ottawa River, Lac Cassé in the Bersimis River watershed and Lac Ste. Anne on the Toulouste River, a tributary of the Manicouagan River.

*The Quebec Hydro-Electric Commission.*—The Quebec Hydro-Electric Commission was established in 1944 (SQ 1944, c. 22) for the purpose of supplying power to the municipalities to industrial and commercial undertakings and to citizens of the Province of Quebec at the lowest rates consistent with sound financial administration. On May 1, 1963, the Commission acquired control of the following privately owned electrical utilities operating in the Province of Quebec: the Shawinigan Water and Power Company, the St. Maurice Power Corporation, the Quebec Power Company, the Southern Canada Power Company, the Gatineau Power Company, the Northern Quebec Power Company, the Saguenay Electric Company, and the Lower St. Lawrence Power Company. As a result of these transactions, all electricity production, except for facilities operated by certain industrial organizations in their own manufacturing operations, was brought under the control of a single authority. The services of the Commission now cover virtually the entire province except for local distribution of small amounts of electricity by some municipalities, most of which is purchased from the Commission or its subsidiaries.

At the end of 1965 the Commission (Hydro-Quebec) controlled, among other assets, the following hydro-electric and thermal-electric plants:—

Item	Hydro-Electric		Thermal-Electric	
	Plants	Capacity <sup>1</sup>	Plants	Capacity
	No.	kw.	No.	kw.
Hydro-Quebec only.....	9	4,742,260	1	36,000
Subsidiaries of Hydro-Quebec—				
Shawinigan.....	11	1,532,425	4	300,740
Quebec Power.....	6	28,370	7	1,630
Southern Canada Power.....	4	47,256	—	—
Gatineau Power.....	13	545,880	—	—
Northern Quebec Power.....	1	89,600	—	—
Saguenay Electric.....	4	8,790	—	—
Lower St. Lawrence Power.....	3	11,350	2	5,413
TOTALS.....	51	7,005,931	14	343,783
Purchases by Hydro-Quebec and subsidiaries.....	—	606,000	—	—

<sup>1</sup> Dependable hydro-electric peak capacity at time of freeze-up approximated 6,590,000 kw.

These facilities now permit the balanced distribution of power throughout Quebec and the most efficient use of the water power resources of the province. Hydro-Quebec and its subsidiaries, at the end of 1965, served virtually all communities in the province. Customers numbered 1,539,073 and the distributed primary power demand was 6,911,000 kw. Total power delivered was 6,956,000 kw. Power distributed is given in terms of the net output of the sources of supply made available to the consolidated system at the time of annual primary peak; it also includes purchases of power from other power producers.

**Ontario.**—The Hydro-Electric Power Commission of Ontario is a corporate entity, a self-sustaining public enterprise endowed with broad powers with respect to the supply of electricity throughout the Province of Ontario. Its authority is derived from an Act of the Provincial Legislature passed in 1906 to give effect to recommendations of earlier advisory commissions that the water powers of Ontario should be conserved and developed for the benefit of the people of the province. It now operates under the Power Commission Act (SO 1907, c. 19) passed in 1907 as an amplification of the Act of 1906 and

subsequently modified from time to time (RSO 1960, c. 300, as amended). The Commission may have from three to six members, all of whom are appointed by the Lieutenant-Governor in Council. Two commissioners may be members of the Executive Council of the Province of Ontario.

The basic principle governing the financial operations of the Commission and its associated municipal utilities is that electrical service is provided at cost. The Commission interprets cost as including payments for power purchased, charges for operating and maintaining the power supply facilities, and related fixed charges. The fixed charges represent interest on debt, provisions for depreciation, allocations to reserves for contingencies and rate stabilization, and the further provision of a sinking fund reserve for retiring the Commission's capital debt. While the enterprise from its inception has been self-sustaining, the province guarantees the payment of principal and interest on all bonds issued by the Commission and held by the public. In addition, the province has materially assisted the development of agriculture by contributing under the Hydro-Electric Distribution Act toward the capital cost of extending rural distribution facilities.

The entire provincial area served is regarded for financial and administrative purposes as a unit, but there is no electrical connection between the Commission's facilities in north-western Ontario and those serving customers in the remainder of the province. Statistics are therefore presented for two operating systems, the East System and the West System; the systems respectively serve the areas east and west of a line extending north from Lake Superior to the Albany River, a line that roughly conforms with the boundary dividing Thunder Bay District from the Districts of Algoma and Cochrane.

In addition to administering the enterprise over which it has direct control, the Commission, under the Power Commission Act and the Public Utilities Act, exercises certain regulatory functions, particularly with respect to the group of municipal electrical utilities which it serves. In order to provide convenient and expeditious service in this dual function of regulation and supply, the Commission subdivides its province-wide operations into seven regions with regional offices located in seven major municipalities.

The Commission is concerned primarily with the provision of electric power by generation or purchase and its delivery to the electrical utilities for resale in municipalities having cost contracts with the Commission. The Commission supplies power in bulk, though not under cost contract, to direct customers, including industrial customers whose requirements are so large or so unusual as to make service by the local municipal utilities impracticable, mines, industries in unorganized territories, and certain interconnected systems.

In addition to these operations, which represent about 90 p.c. of its energy sales, the Commission delivers electric power to retail customers in rural areas and in a small group of about 30 municipalities served by Commission-owned local distribution facilities. Retail service throughout the province is provided for the most part, however, by the municipal electrical utilities, who supply ultimate customers in most cities and towns, in many villages, and in certain populous township areas. The municipal electrical utilities are owned and operated by local commissions.

During 1965, the Commission's investment in fixed assets at cost increased by \$131,588,092 and at the end of the year amounted to \$2,893,822,848. Total assets after deducting accumulated depreciation were \$2,987,297,556.

In 1965 a total of 360 associated municipal electrical utilities engaged in the retail distribution of electricity purchased power from the Commission. The total assets of these utilities, after deducting accumulated depreciation, amounted to \$924,647,558, of which \$378,707,011 represented the equity acquired in the Commission's systems by the municipal utilities operating under cost contracts.

The Commission's power development program as at Dec. 31, 1965 is given in Table 13 and is also outlined at pp. 646-647.

### 13.—Current Power Development Program of The Hydro-Electric Power Commission of Ontario, as at Dec. 31, 1965

System and Development	Units	In Service	Installed Capacity
	No.		kw.
Lakeview—near Toronto.....	8	1961-68	2,400,000
Douglas Point Nuclear Power—near Kincardine.....	1	1966	200,000
Kipling—Mattagami River.....	2	1966	125,400
Mountain Chute—Madawaska River.....	2	1967	139,500
Lambton—14 miles south of Sarnia.....	4	1968-71	2,000,000
Pickering (nuclear)—20 miles east of Toronto.....	2	1970-71	1,080,000
Barrett Chute (extension)—Madawaska River.....	2	1968	120,000 <sup>1</sup>
Stewartville (extension)—Madawaska River.....	2	1969	100,000 <sup>1</sup>
Combustion turbine units—various sites.....	25	1965-67	290,700

<sup>1</sup> Tentative capacity.

### 14.—Resources of The Hydro-Electric Power Commission of Ontario Generated and Purchased (All Systems), December 1963-65

Year and System	Hydro-Electric Stations <sup>1</sup>	Thermal-Electric Stations <sup>1</sup>	Power Purchased
	kw.	kw.	kw.
December 1963—			
East System.....	4,437,250	2,015,000	617,500
West System.....	593,500	93,000	—
<b>Totals.....</b>	<b>5,030,750</b>	<b>2,108,000</b>	<b>617,500</b>
December 1964—			
East System.....	4,445,250	2,027,000	617,000
West System.....	593,500	93,000	—
<b>Totals.....</b>	<b>5,038,750</b>	<b>2,120,000</b>	<b>617,000</b>
December 1965—			
East System.....	4,391,350	2,600,000	521,300
West System.....	593,500	93,000	—
<b>Totals.....</b>	<b>4,984,850</b>	<b>2,693,000</b>	<b>521,300</b>

<sup>1</sup> Dependable peak capacity—the amount of power which resources can be expected to supply at the time of the system primary peak requirements, assuming that all units are available and that the supply of water is normal. This capacity will vary from time to time in accordance with changing conditions. The capacity of a source of purchased power is based on the terms of the purchase contract.

### 15.—Distribution of Power to Systems of The Hydro-Electric Power Commission of Ontario, Years Ended Dec. 31, 1960-65

NOTE.—Peak load generated and purchased, primary and secondary, in terms of generation.

System	1960	1961	1962	1963	1964	1965
	kw.	kw.	kw.	kw.	kw.	kw.
East System.....	5,583,206	5,915,484	6,362,585	6,684,726	7,107,690	7,765,107
West System.....	574,328	548,448	606,300	615,570	581,100	583,300
<b>Totals.....</b>	<b>6,157,534</b>	<b>6,463,932</b>	<b>6,968,885</b>	<b>7,300,296</b>	<b>7,688,790</b>	<b>8,348,407</b>



## 16.—Growth of The Hydro-Electric Power Commission of Ontario, 1956-65

Year	Ultimate Customers Served Directly or Indirectly	Total Power Distributed <sup>1</sup>	Assets of Commission and Municipal Utilities
	No.	kw.	\$
1956.....	1,612,049	4,909,104	2,293,492,487
1957.....	1,674,062	4,970,576	2,563,058,384
1958.....	1,757,405	5,417,536	2,756,758,142
1959.....	1,830,453	6,018,204	2,909,088,086
1960.....	1,881,472	6,157,534	3,044,800,819
1961.....	1,938,897	6,463,932	3,196,429,522
1962.....	1,991,289	6,968,885	3,148,330,722
1963.....	2,041,732	7,300,296	3,225,289,707
1964.....	2,095,754	7,688,790 <sup>r</sup>	3,331,568,632 <sup>r</sup>
1965.....	2,142,281	8,348,407	3,533,238,103

<sup>1</sup> Sum of the maximum 20-minute coincident peak loads (primary plus secondary) of each of the systems operated by the Commission, given in terms of net output of the sources of supply to each system for the last month of each fiscal year.

**Manitoba.**—Manitoba Hydro is the primary developing, generating and distributing power agency in the Province of Manitoba. The corporation came into being Apr. 1, 1961, following amalgamation of the two former provincial government utilities engaged in the generation and distribution of electric power.

Manitoba Hydro operates six hydro-electric generating stations, two thermal-electric generating stations and 14 diesel-electric generating plants. The combined generating capability is 1,162,781 kw., hydro installations accounting for 910,000 kw., thermal installations for 244,000 kw. and diesel installations for 8,781 kw. Four of the hydro stations are located on the Winnipeg River and, like the thermal installations, provide power to the southern part of the province. The fifth hydro-electric generating station, rated at 160,000 kw., is situated on the Nelson River 425 miles north of Winnipeg and supplies power to The International Nickel Company of Canada Limited development and the townsite at Thompson. The sixth hydro-electric installation is the newly completed 330,000-kw. Grand Rapids Generating Station located on the Saskatchewan River. This station is connected electrically with southern Manitoba. Diesel installations are used to provide power in isolated northern communities.

In serving its 216,691 urban, rural, commercial and industrial customers, the corporation maintains some 35,264 miles of primary transmission and farm distribution lines. Approximately 98 p.c. of the total resident-occupied farms in the province are electrified and 613 cities, towns and villages are provided with power service. While Manitoba Hydro supplies power for most of the province including the cities and municipalities adjoining the city of Winnipeg and comprising part of Metropolitan Winnipeg, it does not distribute power within the corporate limits of the city although it does supply a portion of the city's power requirements.

Power plant construction in Manitoba in 1965 is outlined at p. 647.

**Saskatchewan.**—The Saskatchewan Power Corporation was established on Feb. 1, 1949, and operates under the provisions of the Power Corporation Act (SS 1950, c. 10, as amended). It succeeded the Saskatchewan Power Commission which had operated from Feb. 11, 1929. The original functions of the Corporation included the generation, transmission, distribution, sale and supply of hydro and steam electric energy. Since 1952, the Corporation has been authorized to produce or purchase, and to transmit, distribute, sell and supply natural or manufactured gas.

On May 1, 1965, the Corporation purchased the generating and distribution facilities of the City of Regina and its activities now cover the entire province. During the year the

Corporation served approximately 980 urban-size communities in retail sales, and served the cities of Saskatoon and Swift Current, the town of Battleford and the hamlet of Waskesiu in bulk sales. Some bulk power was sold to the Manitoba Hydro-Electric Board and to the City of Regina previous to take-over on an exchange basis.

At the end of 1965, the Corporation served 251,361 retail customers and 42,774 customers located in communities supplied with power through bulk sales, a total of 294,135. The retail customers included 183,785 urban customers and 67,576 classified as rural, mainly farm meters. During 1965, 2,871,800,000 kwh. were made available to customers, of which 2,794,782,000 kwh. were generated in Corporation plants and 77,018,000 kwh. were purchased in bulk. At the end of the year, the Corporation had invested, at cost, \$396,485,000 in electric system assets out of a total of \$551,663,000 in plant-in-service in the combined electric and natural gas systems.

During 1965, Squaw Rapids, the first hydro-electric plant within the provincial system, supplied 34.5 p.c. of the gross generation. At the year-end, the Corporation also owned and operated six steam generating plants—two each at Saskatoon and Estevan, and one each at Regina and Moose Jaw, the latter operated only during the peak months. Steam supplied 60.2 p.c. of total system requirements and three internal combustion gas dual fuel plants—the Kindersley, the Swift Current, and the Regina B—supplied most of the remainder. System capability in operation was assessed at 800,150 kw. with 537,000 kw. in steam plants, 201,000 kw. in hydro and 62,150 kw. in gas turbine and internal combustion units and the Corporation owned and operated 73,290 miles of transmission and rural lines (excluding urban distribution and hi-lines).

Power plant construction in Saskatchewan in 1965 is outlined at p. 647.

#### 17.—Growth of the Saskatchewan Power Corporation, 1956-65

Year	Communities Served in Bulk and Retail Sales	Individual Meters in Communities Served	Power Distributed	Revenue
	No.	No.	kwh.	\$
1956.....	799	162,594	659,720,877	15,566,910
1957.....	870	178,567	780,613,534	18,152,460
1958.....	880	188,293	909,086,629	20,687,771
1959.....	962	197,451	1,067,349,615	23,909,113
1960.....	984	221,675	1,233,531,753	26,667,471
1961.....	901	229,336	1,498,055,955	30,263,598
1962.....	961 <sup>1</sup>	235,386	1,645,862,278	33,106,018
1963.....	969	240,812	1,926,862,724	36,892,949
1964.....	976	246,289	2,208,149,680	39,777,472
1965.....	984	294,135	2,871,800,000	46,145,000

<sup>1</sup> November 1962 figure.

**Alberta.**—The generation and distribution of electric power in Alberta is handled by a combination of several municipally owned urban systems and three investor-owned companies serving the greater part of the province. The regulatory authority over the investor-owned systems is the Public Utilities Board, which has jurisdiction over the distribution and sale of electricity. The Board, which controls franchises and rates, has power to hold investigation upon complaint either by a municipality or by a utility company, and following such investigation may fix just and reasonable rates. The Alberta Power Commission controls all phases of system development, including the provincial grid system.

Power plant construction in Alberta in 1964 is outlined at p. 647.



**British Columbia.**—The British Columbia Hydro and Power Authority is a corporation and an agency of the Crown in right of the Province of British Columbia. The electric service of the Authority includes the generation and transmission of electricity and its distribution throughout the areas of British Columbia; the Authority also operates gas, passenger transportation and rail freight services.

Of the Authority's total electric power requirements of 9,611,097,318 kwh. for the year ended Mar. 31, 1966, 6,701,800,625 kwh. or 69.7 p.c. were produced by hydro-electric stations, 2,358,383,396 kwh. or 24.5 p.c. were produced by thermal plants and the remainder, amounting to 550,913,297 kwh., was purchased. Kilowatt-hours of electricity sold during the year (8,505,617,262) rose by a remarkable 15.8 p.c. over 1964-65, nearly double the 8.3 p.c. average annual rate of increase for the preceding five years.

Impressive rates of increase in kilowatt-hours consumed were recorded for all categories of customers during 1965-66.

<i>Category</i>	<i>P.C. Increase Over Previous Year</i>
Residential.....	8.7
General.....	12.6
Industrial.....	13.0
Bulk power.....	26.0
Other.....	9.7
<b>TOTAL.....</b>	<b>15.8</b>



Across the mile-and-a-half-wide valley of the Peace River in British Columbia rises a 600-foot-high, man-made barrier, half a mile thick at its base, which will hold back 62,000,000 acre-feet of water in a massive reservoir that will take seven years to fill and create 1,000 miles of shoreline. When the project is finished, powerful turbines in an underground powerhouse will spin under the tremendous pressure of water from the reservoir above and generate 2,300,000 kw. of energy for the industries of the future.



At Mar. 31, 1966 the number of customers receiving electric service from the Authority was 529,241, up 26,398 from the previous year. The average annual rate for residential customers dropped from 1.76 cents to 1.52 cents a kilowatt-hour, and the average annual residential consumption rose from 5,486 kwh. to 5,650 kwh.

**18.—Summary Statistics of the British Columbia Hydro and Power Authority,  
Year Ended Mar. 31, 1966**

Item	Amount	Item	Amount
Generating capacity..... kwh.	2,044,228	Proportionate Sales—	
Hydro..... “	1,305,722	Residential..... p.c.	30
Thermal and diesel..... “	738,506	Other systems (mainly residential). “	1
		Commercial, industrial, etc..... “	69
Power requirements..... '000 kwh.	9,611,097	Pole Miles of Line—	
Generated..... “	9,060,184	Transmission (high voltage)..... No.	4,204
Purchased..... “	550,913	Distribution primaries..... “	12,696
Customers at year-end..... No.	529,241	Revenue (electric)..... \$'000	104,918
Electricity sold..... '000 kwh.	8,505,617	Capital investment (plant in operation)..... \$'000	1,026,254

**Northwest Territories and Yukon Territory.**—The Northern Canada Power Commission, formerly Northwest Territories Power Commission, was created by Act of Parliament in 1948 to supply electric power to points in the Northwest Territories where a need developed and where power could be provided on a self-sustaining basis. By legislation passed in 1950, the Act was extended to include Yukon Territory. The Commission has authority to construct and operate power plants as required in the Territories and, subject to approval of the Governor in Council, in any other parts of Canada.

The Commission has hydro-electric power developments on the Yukon River near Whitehorse, Y.T., the Mayo River near Mayo, Y.T., the Snare River northwest of Yellowknife, N.W.T., and the Taltson River northeast of Fort Smith, N.W.T. Diesel-electric plants are operated at Fort Simpson, Fort Resolution, Fort McPherson, Aklavik, and Field, B.C., and utility plants comprising power, central heat and water and sewerage services at Inuvik and Frobisher Bay, N.W.T., and at Moose Factory, Ont.

The Whitehorse Rapids power development, in service since 1958, supplies the Department of National Defence and the Department of Public Works at Whitehorse, most of the power for the city of Whitehorse, and three electric steam generators for heating the Department of National Health and Welfare hospital and two Department of Manpower and Immigration hostels. The two Snare River hydro developments, placed in service in 1948 and 1960, supply power to the mines in the Yellowknife area and, in conjunction with the Bluefish hydro-electric plant of Cominco Ltd., the town of Yellowknife; the two plants are operated by remote control from Yellowknife. The Mayo River plant has supplied power to mining properties in the Elsa and Keno areas and to the communities of Mayo and Keno City since 1952. The Taltson River Hydro Project, commissioned in late 1965, supplies the lead-zinc mining operation at Pine Point, and the communities of Fort Smith and Pine Point; the plant is operated by remote control from Fort Smith. Details of construction in the Territories during 1965 are outlined at p. 648.

# CHAPTER XVI.—MANUFACTURES\*

## CONSPECTUS

	PAGE		PAGE
SECTION 1. MANUFACTURING AND THE CHANGING INDUSTRIAL STRUCTURE OF THE CANADIAN ECONOMY, 1946-65.....	665	Subsection 1. Major Historical and Current Statistics of Manufacturing.....	679
SECTION 2. EXPORTS OF MANUFACTURED GOODS.....	675	Subsection 2. Distribution of Manufacturing by Province and by Metropolitan Area..	687
SECTION 3. TRENDS IN PRINCIPAL STATISTICS, 1957-64.....	676	Subsection 3. Size of Manufacturing Establishments Based on Employment and Shipments.....	699
SECTION 4. STATISTICS OF MANUFACTURING..	679	SECTION 5. FEDERAL ASSISTANCE TO MANUFACTURING.....	701

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

## Section 1.—Manufacturing and the Changing Industrial Structure of the Canadian Economy, 1946-65

Changes in the industrial structure of the Canadian economy, as reflected in long-term rates of growth of various industries, show a number of important or interesting developments involving or affecting manufacturing. At least seven major aspects merit comment:—

- (1) The manufacturing industries have increased their apparent share in the gross domestic product in "real" terms—that is, after the effects of price changes have been removed from increases in production.
- (2) The manufacturing industries have been accounting for a lower share of the gross domestic product in current dollars—that is, of production measured at the prices actually prevailing from year to year. This probably reflects a slower rate of rise in prices in manufacturing industries than in the economy as a whole; in turn, the slower price rise is at least partly a result of higher rates of growth in productivity in the manufacturing industries than in the economy as a whole.
- (3) The industrial sectors of the economy that depend relatively heavily on the use of fixed capital or use manufactured goods as materials for further manufacture have probably increased their output more rapidly, in aggregate, than the economy as a whole.
- (4) The introduction of new products and changes in technology have contributed heavily to the expansion of a broad range of individual manufacturing industries where growth has exceeded that of the manufacturing industries as a whole.
- (5) In line with experience in other countries, certain manufacturing industries making products the demand for which is favoured by rising living standards have grown more rapidly than those making products for which demand tends to rise less rapidly than consumer income.
- (6) Manufacturing industries engaged primarily in processing primary products for export have continued to play a key role in the over-all growth of the manufacturing industries. Or, in other words, the growth of the United States economy and its demand for fabricated materials has continued to exert an important influence on the expansion of manufacturing activity in Canada.
- (7) In very recent years, there has been a dramatic rise in exports of finished manufactures to the United States and other countries, although these exports still do not contribute greatly to the over-all volume of manufacturing industries.

\* Sections 1 to 4 were prepared in the Manufacturing and Primary Industries Division, Dominion Bureau of Statistics, and Section 5 in the Information Division, Department of Industry, Ottawa.

An impression of the place of manufacturing in the growth of the economy in the post-war period 1946-65 and of the effect of the growth of various industries upon that of manufacturing is given by the following annual average rates of growth of the major industrial sectors compared with that of all industries; growth is measured by the trend in the official index of their "real" gross domestic product (or physical volume of production).

<i>Rank</i>	<i>Industry</i>	<i>Average Annual Growth</i>	<i>Rank</i>	<i>Industry</i>	<i>Average Annual Growth</i>
		<i>p.c.</i>			<i>p.c.</i>
1	Electric power and gas utilities...	9.6	8	Public administration and defence	4.0
2	Mining.....	9.1	9	Community, recreation, business and personal service.....	3.6
3	Construction.....	5.1	10	Fishing and trapping.....	1.8
4	Finance, insurance and real estate.	5.0	11	Forestry.....	1.7
5	Manufacturing.....	4.8	12	Agriculture.....	1.5
6	Transportation, storage and communication.....	4.6			
7	Trade.....	4.1		ALL INDUSTRIES.....	4.4

The growth rates of the six fastest growing industries all exceeded that of the economy as a whole. It is significant that, although these six together accounted for only 58.4 p.c. of the gross domestic product at factor cost in 1965, over the period 1959-65 they were responsible for 77.5 p.c. of business fixed capital formation. The latter reflects not only their need for new fixed capital because of expanding output but also the relative capital intensity of much of the production represented—that is, the faster-than-average growth of these capital-using industries favoured demand for manufactured construction materials, for machinery and equipment of different kinds and for various materials such as steel, themselves the products of factories.

The following statement shows, for 1964 and 1965 and earlier periods, the share of the gross domestic product accounted for by the manufacturing industries in current dollars and, for comparison, the actual or apparent shares of these manufacturing industries in several other aggregates of the Canadian economy.

<i>Item</i>	<i>Annual Averages</i>					
	<i>1946-50</i>	<i>1951-55</i>	<i>1956-60</i>	<i>1961-65</i>	<i>1964</i>	<i>1965</i>
	<i>p.c.</i>	<i>p.c.</i>	<i>p.c.</i>	<i>p.c.</i>	<i>p.c.</i>	<i>p.c.</i>
Gross domestic product at factor cost.....	28.0	28.5	27.0	26.0	26.5	26.3
Wages, salaries and supplementary labour income.....	33.1	32.4	30.0	28.4	28.4	28.3
Employment <sup>1</sup> .....	26.2	25.9	25.5	24.2	25.0	23.8
Corporation profits before taxes...	54.6	52.6	47.1	46.7	46.1	45.6
Business gross fixed capital formation (excl. new residential construction).....	24.5	23.3	22.7	24.1	25.9	27.0
Domestic exports.....	71.3	68.0	64.7	63.7	63.4	64.9

<sup>1</sup> Based on monthly sample survey of the labour force; employment reported by manufacturers would represent a somewhat smaller percentage of total employment for a combination of reasons. Statistics for 1961 and later years are not wholly comparable with earlier periods shown.

The declining share of the manufacturing industries in labour income, as shown above, undoubtedly reflects the more rapid growth of output per man-hour in these industries than in the economy as a whole. These figures do not include all fringe benefits and thus are only a partial measure of expenses incurred in connection with the use of labour. Also, since the employment series is not necessarily comparable with the wage and salary statistics over the periods shown, inferences should not be drawn about the trend in average salaries and wages in the manufacturing industries relative to the economy as a whole. By contrast, the share of the manufacturing industries in business gross fixed capital formation (excluding new residential construction) does not show any marked



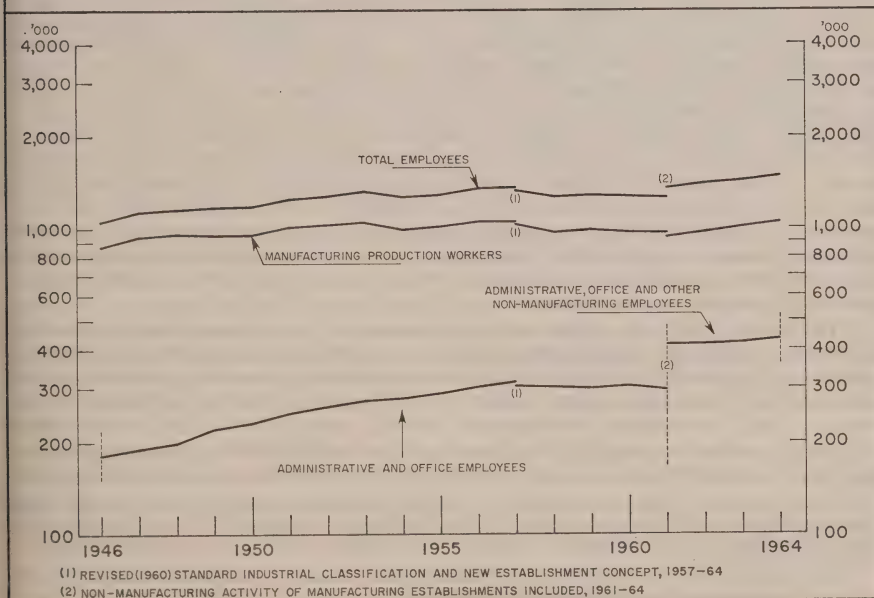
trend. There may be a connection between this fact and the downtrend in the apparent share of labour income. The increasing productivity per man-hour associated with these downtrends has required heavy capital investments in labour-saving mechanization over and above the expenditures required to merely expand production; there has been, in terms sometimes used by economists, a "deepening" as well as a "widening" of capital. This is underlined by a DBS estimate that the net stock of machinery and equipment in the manufacturing industries rose at an average annual rate of about 12 p.c. between 1946 and 1960\* (like the production growth rates, this excludes the effects of price changes).

Shares in total labour income and in corporation profits are affected, of course, by relative changes in price and wage levels in various manufacturing industries. These shares and the growth of the capital stock are also affected by the changing "mix" of production as between "capital intensive" and "labour intensive" manufacturing industries. It is interesting to note that industry groups for which the production indexes advanced more rapidly than for manufacturing as a whole in the 1946-65 period paid salaries and wages amounting to 45.6 p.c. of their value added by manufacturing in 1949 (the base year for the indexes); by comparison, other manufacturing industries paid salaries and wages amounting to 49.5 p.c. of their value added in the same year. The figure for all manufacturing industries was 48.6 p.c.

The declining share of the manufacturing industries in exports—they account for almost all exports of manufactured goods—is associated with the higher rate of growth of output in the mineral industries noted earlier. As will be seen, the manufacturing industries have maintained the share of their own output that is exported.

\* DBS publication *Fixed Capital Flows and Stocks, Manufacturing, Canada, 1926-1960, Statistical Supplement* (Catalogue No. 13-523).

### EMPLOYMENT IN THE MANUFACTURING INDUSTRIES, 1946-64



### Influences on Relative Rates of Growth

As an aid in the examination of the forces underlying the changing industrial structure of the manufacturing industries, the following statement shows the major industry groups ranked according to their 1946-65 average annual percentage growth; these growth rates describe the expansion of the physical volume of output of these industries as measured by monthly indexes of industrial production.\*

Industry Group	Average Annual Growth		Rank of Growth Rate	
	1946-65	1956-65	1946-65	1956-65
	p.c.	p.c.		
Miscellaneous manufactures.....	9.1	8.1	1	1
Products of petroleum and coal.....	8.6	5.4	2	5
Chemicals and allied products.....	7.6	6.1	3	3
Electrical apparatus and supplies.....	7.0	6.1	4	4
Non-metallic mineral products.....	6.9	4.3	5	11
Tobacco and tobacco products.....	6.1	5.1	6	9
Printing, publishing and allied industries.....	5.3	4.0	7	13
Iron and steel products.....	4.8	5.3	8	6
Textiles.....	4.2	7.1	9	2
Rubber products.....	4.2	5.2	10	7
Paper products.....	4.1	4.5	11	10
Transportation equipment.....	4.1	5.2	12	8
Foods and beverages.....	3.9	4.1	13	12
Non-ferrous metal products.....	3.8	3.8	14	15
Wood products.....	3.4	3.3	15	16
Clothing.....	3.0	3.8	16	14
Leather products.....	1.6	2.2	17	17
ALL MANUFACTURING INDUSTRIES .....	4.8	4.9	...	...

Where an industry group has been growing more rapidly than the average, it has been increasing its share of the volume of production of manufacturing as a whole; where it has been growing less rapidly than the average, its share has been decreasing.† Two major forces have contributed very noticeably to the expansion of demand for the products of several of the more rapidly growing industry groups—technological change, in a broad sense, and rising per capita real incomes (i.e., incomes adjusted for price changes). The term “technology” in its narrowest sense refers to the methods of production from an engineering viewpoint; in economics it is often expanded to cover the development of new products that better meet the needs of user industries or consumers, drawing upon technical or scientific knowledge and generating new combinations of capital and labour just as progress in the technology of existing products does. As will be seen, the introduction of new products has had a conspicuous effect on Canadian manufacturing during the postwar period. At the same time, some of the industry groups that have grown most rapidly have benefited from the fact that per capita demand for their products tends, in the experience of Canada and of other nations as well, to grow more rapidly than per capita consumer income. On the other hand, some of the slowest growing industry groups shown above make products the demand for which tends, in any nation, to grow relatively less rapidly than per capita income.

The plywood industry may be used as an example of the effects of these forces on the growth of an industry. Technological change both in the industry itself and in the construction industry combined with a rise in per capita consumer real income to increase the production of plywood much more rapidly than the population or the real gross domestic product. The development of waterproof bonding resins prior to the 1946-65 period laid the foundation for much of the expansion of the industry during that period and, in addition, the industry's product met a need of builders and contractors to use less labour

\* These indexes are published in DBS periodical *Industrial Production Index* (Catalogue No. 61-005) and are based on the 1948 standard industrial classification; they will later be converted to the revised (1960) standard industrial classification, thus making them comparable with currently issued dollar and employment data for manufacturing industries.

† Estimates of constant dollar volume of output, as such, are not prepared, so that this is an indirect method of studying changes in the industrial structure of manufacturing.

in putting wood products in place in certain phases of construction. Superimposed on these effects was the more rapid growth of the housing market—and probably of the home improvement market—resulting from rising per capita consumer incomes. The plywood industry also illustrates another impact of technological change on demand for products and on industrial structure which undoubtedly applies widely—that is, the effect of improved methods of production within an industry on its costs and on the price competitiveness of its products. The plywood industry has been particularly subject to advances of this nature, which have helped to expand the use of its product; the DBS selling price index for the industry was lower for 1965 than for 1956, although prices of most lumber had risen over the period.

However, in the following analyses of industry groups attention is focused on the more readily observable types of technological innovation—changes in the product-use patterns of user industries and the development of new products. No attempt has been made to assess the undoubtedly important differential effects of improvements in the productivity of particular industries from automation or other cost-cutting procedures in production.

**Industry Groups.**—As shown in the comparisons of growth rates of industry groups on the opposite page, the *Miscellaneous manufactures* group grew almost twice as fast as manufacturing industries as a whole, both in the 20-year postwar period and in the latest 10 years, and has been the most rapidly growing industry group in both periods. The two most obvious influences on the relative growth rates of manufacturing industries generally—technological change and higher per capita income—appear to have played their part in this very rapid expansion also. Technological change made itself felt in the growth of at least two industries in the group—scientific and professional equipment manufacture and plastics fabrication: the increasing technical sophistication of both the civilian and defence economies, expressed partly in new products, stimulated the production of scientific equipment and instruments; higher consumer incomes probably also had an impact on the scientific and professional equipment industry, since it includes the manufacture of photographic equipment and supplies. Although production figures are not published because of the small number of producers, retail sales of cameras and photographic equipment showed an average annual increase of about 18 p.c. between the 1951 and 1961 Censuses of Merchandising. This increased demand actually represents both forces: technological innovation made photography somewhat more attractive to an unskilled mass public and higher incomes increased their willingness to spend money on it. Imports have met a good part of the demand but there must have been a substantial stimulus to domestic production as well. The rapid expansion of the fabrication of plastics is attributable to technical progress in the area of plastic materials produced mainly by industries in the Chemicals and allied products group.

*Products of petroleum and coal*, the second fastest growing industry group, achieved its greatest expansion during the first postwar decade but has since continued to grow at a substantial rate. The discovery of large crude petroleum resources in the Canadian west in the late 1940s had an influence through their effect on the cost of petroleum products relative to substitutes—a supply consideration lying outside the realm of technology. Rising consumer incomes have favoured automobile ownership; trucking has increased its share of inter-city transportation of goods; and greater relative use of oil for heating and the operation of railway locomotives have been forces acting upon the industry's growth.

The development of Canadian petroleum has also facilitated to some extent the expansion of the *Chemicals and allied products* group although the growth of this group rests largely on technological innovation in the field of chemistry. (This industry group has also been one of the most rapidly growing in the United States in the postwar period.) As already mentioned, the development of new plastics and their inroads upon the markets for other materials had an important influence on the growth of the *Miscellaneous manufactures* group; in turn, the supplying of the plastic resins used in the fabricating industry



has contributed to the growth record of the Chemicals and allied products group. Indeed, it is in the latter group that scientific discovery has had its most broadly based impact, as exemplified by the very substantial expansion in the production of pharmaceuticals. Increased output of synthetic detergent also added to the growth of this group, although it was partly counterbalanced by decreased output of soap, for which it is a substitute. Output of paints, varnishes and lacquers has benefited from a combination of influences—the growth of industrial demand as the production of user industries has expanded, the fact that residential building has increased more rapidly than population, the development of easy-to-use products which has encouraged painting by householders, together with the probable tendency of the home improvement market to grow more rapidly per capita than income. Changing agricultural technology, expressed in an average annual increase of 8.2 p.c. in manufacturers' tonnage sales of fertilizers to the Canadian market (excluding sales to other manufacturers) during the 1956-65 period, has been another source of growth. Synthetic rubber production, a result of scientific research, is classified to this group under the 1948 standard industrial classification and has no doubt stimulated its expansion, though output statistics on this product are not published.

The major technical innovation represented by the invention and development of television was the largest single factor accounting for the *Electrical apparatus and supplies* group occupying fourth place in postwar growth rate. The growth of television manufacturing and therefore of the Electrical apparatus and supplies group was actually rather uneven over the postwar period; manufacturers' sales of television sets, after a very steep ascent, declined somewhat after 1955 and then began climbing again in 1961. Generally, higher per capita incomes gave a broadly based stimulus to the group, as ownership of a wide range of appliances expanded; for instance, some 96 p.c. of households owned electric refrigerators in 1966 compared with 79 p.c. in 1956 and the number of households owning home freezers increased at an average annual rate of 17 p.c. in the same period. New products such as room air conditioners and, recently, electric tooth brushes were also growth features of varying importance. In addition, production of electrical and electronic products for non-consumer use was expanded, particularly of heavy electrical machinery.

The growth of the *Non-metallic mineral products* group was uneven over the postwar period; it was the fifth most rapidly expanding industry for the whole period but in the latest 10 years was in eleventh place—below the average rate of growth of all manufacturing industries. The unusual growth of the group during the earlier postwar period was attributable particularly to the rapid rise of ready-mix concrete production, a technological innovation that transferred large amounts of production activity from the construction industry to the concrete products industry and may conceivably have had some effect on the total amount of concrete used. Also of importance were such technological developments as the use of pre-cast concrete units in high-rise buildings and the apparent growth in the relative use of concrete blocks in building construction. The rise over the postwar period in per capita construction expenditures (deflated for price changes) favoured the level of activity in this industry group, and there has also been an uptrend in the use of hydraulic cement per dollar of these construction expenditures.

The sixth most rapid growth rate of the 1946-65 period was recorded by the *Tobacco and tobacco products* group. Its 6.1-p.c. rate of increase in physical volume agrees closely with the 6.6-p.c. average annual gain in cigarettes released for consumption per capita of the population. Here, a fundamental change in consumer habits, not necessarily related to higher incomes, is involved.

The *Printing, publishing and allied industries* have been subject to conflicting influences but have nevertheless obtained a growth rate of 5.3 p.c. in the postwar period,

the seventh highest among the industry groups and slightly above the growth rate for all manufacturing; in the 1956-65 period, however, the growth rate was only 4.0 p.c., significantly lower than the average for all manufacturing industries. There is an indirect, inverse relationship to the high growth rate of the Electrical apparatus and supplies industries, based especially on the introduction of television and that industry's eventual virtual saturation of the consumer market with television sets. This led to heavy inroads on the advertising revenues of the printing and publishing industry, serving to lower its growth rate for the latest 10 years and for the whole postwar period. The industry group, of course, also contains much production oriented to non-consumer users of printed matter, business forms and the like, and this market has been supported by the upward movement of over-all business activity.

Output expansion of the *Iron and steel products* group over the postwar period was at almost the same rate as that of manufacturing industries as a whole; in the 1956-65 period, it exceeded that of all manufacturing. These trends reflect growth in primary iron and steel production and in that part of the iron and steel using industries included in this industry group under the 1948 standard industrial classification. Some comments on the primary iron and steel industry and the sheet metal industry are given on pp. 673-674; the industry group also includes the household, office and store machinery industry, which benefited from the impact of higher consumer incomes on sales of certain household appliances. The primary iron and steel industry, of course, also benefited from the general uptrend in consumer appliance sales, whether included in this group or in the Electrical apparatus and supplies group.

Although the growth rate of the *Textiles* group was below the average for all manufacturing for the 1946-65 period, in the 1956-65 period its average annual growth rate was second highest among the industry groups. This significant advance in the recent period was attributable to the introduction of synthetic fabrics and their rapid penetration of the textile using industries. The fluctuating share of the Canadian producer in the domestic market complicates any analysis of the growth of the textile industries—and of some other industry groups discussed here—and no attempt has been made to relate the growth rates to this consideration.

The growth rate of the *Rubber products* industries is actually tied to that of various industrial and consumer uses of rubber besides the demand represented by motor vehicle tires. However, it is interesting to note that the growth rates for the Rubber products group for both the 1946-65 and 1956-65 periods match almost exactly those of the Transportation equipment group, which includes the motor vehicle industry. In any event, the acceleration of motor vehicle production in recent years has contributed to the increase noted in the growth of the Rubber products group, not only through the equipping of new cars but also through the large replacement market that has developed from the expansion of ownership of motor vehicles.

The *Paper products* group, one of the largest in dollar value, is dominated by the export of newsprint and pulp and its growth rate is correspondingly influenced by these export markets. Although the effect of the television broadcasting industry on printed media advertising and the market for newsprint has had some dampening influence on the expansion of the Paper products group, its growth has been relatively steady. Some production of hardboard is classified to this group and the changes in technology increasing the use of this product class have had some favourable effect.

The *Transportation equipment* group owes its growth rate over the postwar period to at least three outstanding factors—the rise in per capita car ownership; the increasing share of trucking in goods transportation, mentioned in connection with the Petroleum and coal products and the Rubber products groups; and the strong rise in the earlier postwar

period of the Aircraft and parts industry. It has thus been particularly affected by higher consumer incomes, competitive shifts in freight transportation and the defence effort. The same changes that have favoured truck production, however, have adversely affected the railway rolling-stock industry. Shipbuilding activity has been subject to a combination of influences but especially to the rise of this industry in countries with lower wages.

The relatively low over-all growth rate of the *Foods and beverages* group, which represents a large universe of rather diverse individual industries, can be explained by the fact that per capita expenditure on food tends to rise less rapidly than per capita real income. The sub-group of food industries has increased its physical output at an average rate of 3.6 p.c. a year over the 1946-65 period, exactly the same growth rate as that applying to total personal expenditure on food, adjusted for price changes. This is less than the 5.0-p.c. growth rate of the beverage industries, more favoured by the uptrend in consumer purchasing power. Both categories have, of course, increased on a per capita basis since population grew at a rate of only 2.6 p.c. over the period. There has been some trend toward consumption of food in more highly processed forms, which has assisted the food manufacturing industries. This has resulted from higher incomes and, probably, from the increasing numbers of housewives entering the labour market, both factors favouring the increased substitution of factory preparation of food for preparation in the kitchen. This reached its ultimate form in the pre-cooked frozen dinner, which is part of an important technological development, frozen foods.

The growth of the *Non-ferrous metal products* group has been relatively stable at 3.8 p.c. a year for both the postwar period and the latest 10 years, although there has been year-to-year fluctuation with the business cycle. The industry group includes both the primary metal and the metal fabricating industries. As will be seen from the statement on p. 674, the smelting and refining industry, influenced largely by the export market, grew at a faster rate than the group as a whole for the 1946-65 period—4.2 p.c. a year.

Because the *Wood products* group is strongly influenced by exports, particularly to the United States, the dominant influence on its growth over the postwar period has been the rate of growth of the North American market for lumber. This market was somewhat adversely affected by the rapid rise of the plywood industry in the United States, which made some inroads on the lumber requirements in that country. (Tariffs discourage export of Canadian plywood to the United States in large quantities.) However, in recent years the Canadian industry has increased its share of the United States lumber market. The output of the furniture industry has had about the same postwar rate of growth as dwelling unit completions, although it should be noted that the industry also includes non-household furniture and non-wood products.

The *Clothing* and the *Leather products* groups were in the lowest range of growth rates for both the 1946-65 and the 1956-65 periods. This ranking is consistent with experience in various countries of the world, that per capita consumption of these products grows less rapidly than per capita real income. These industries are also subject to import competition, the effect of which, as noted earlier, has usually not been assessed in these analyses. The average annual growth of the Leather products industries has been more rapid in the latest 10-year period, following the marked decline that had taken place in the years immediately following World War II.

All industry groups which grew more rapidly than manufacturing as a whole over the 20-year period were characterized by a faster rate of expansion during the earlier postwar period than during the later postwar period. On the other hand, most of the other industry groups grew more rapidly during the 1956-65 period than during the earlier period.



**Individual Industries.**—To provide a more detailed but less comprehensive impression of forces affecting the industrial structure over the postwar period, the following statement shows growth rates for the 1946-65 period for various individual industries. These include industries for which indexes of physical volume of production are regularly published and which, over this period, might be characterized as having "high" growth rates, i.e., growth rates exceeding that of manufacturing as a whole, or as having "moderate" growth rates, i.e., those exceeding the growth rate of the population (2.6 p.c. a year) but not that of manufacturing as a whole. Almost all published indexes for individual industries are included, since only a very few such indexes indicate a declining trend in physical output per capita of the country's population.

Opposite these individual industries are comments on particular factors making contributions to the growth of the industry. These are not exhaustive examinations of the subject but merely point up the more conspicuous highlights of the forces stimulating growth of the industry. Again, no attempt has been made to assess the effect of import shares of the Canadian market, although fluctuations in these might be important in some industries.

<i>Industry</i>	<i>Average Annual Growth</i>	<i>Some Factors Contributing to Growth</i>
	p.c.	
<b>High-Growth Industries—*</b>		
Concrete products.....	15.8	Technological change: rise of ready-mix concrete production, with transfer of activity from construction industry to manufacturing; wider use of concrete blocks, precast units, etc.
Telecommunication equipment.....	13.1	Technological innovation, especially introduction of television (rise in industry production not as high as postwar average for recent years).
Acids, alkalis, salts and fertilizers.....	9.8	Technological change: new products, including increased use of fertilizers in agriculture.
Petroleum products.....	9.2	Higher living standards leading to wider ownership of passenger cars; larger share of trucks in inter-city goods transportation; increased use of fuel oil for heating; dieselization of railways.
Refrigerators and appliances.....	8.9	Higher living standards leading to wider ownership of consumer appliances; technological innovation, new products.
Veneers and plywoods.....	8.4	Technological change in construction industry, partly exploiting earlier technological advance in development of waterproof resins for bonding plywood.
Synthetic textiles and silk.....	8.2	Technological innovation, new products; large impact from scientific research.
Hydraulic cement.....	7.8	Heavy fixed capital formation in the Canadian economy, extensive engineering construction; some apparent displacement of competitive material.
Aircraft and parts.....	7.4	Rise of aircraft production for defence early in postwar period; later trend not similar although production still at a high level.
Primary iron and steel.....	6.8	Growth of using industries, i.e., motor vehicles, pipeline construction, building construction, etc.
Motor vehicles.....	6.2	Higher living standards leading to wider ownership of passenger cars; increased share of trucking in inter-city goods transportation.

\* Industries in which growth rate exceeded the average for all manufacturing.

<i>Industry</i>	<i>Average Annual Growth</i>	<i>Some Factors Contributing to Growth</i>
	p.c.	
<b>High-Growth Industries—* concluded</b>		
Sheet metal products.....	5.9	Increases in use of wide variety of products and new products, i.e., architectural and ornamental metal in buildings and pressure cans in packaging.
Distilleries.....	5.6	Rising population, incomes and per capita consumption of distilled liquors in U.S. export market, with increased market share for imports there. Rising incomes have also favoured per capita domestic consumption.
Carbonated beverages.....	5.6	Higher living standards, faster rise in younger age groups than in total population.
Motor vehicle parts.....	5.4	Increase in motor vehicle production causing growth of both original equipment and replacement markets. Same influences as on motor vehicle production.
Heavy electrical machinery.....	4.9	Heavy investment in electrical utilities accompanying rising population and increased per capita use of electricity.
<b>Moderate-Growth Industries—†</b>		
Dairy products.....	4.6	Higher per capita income has favoured per capita consumption of some products.
Miscellaneous foods.....	4.6	In early postwar period, legalization of margarine.
Machinery.....	4.4	Has kept pace with growth rate of real domestic product for same period—also 4.4 p.c.; outstripped business expenditures on equipment for gross fixed capital formation, which grew 3.7 p.c. per year, excluding price changes. Benefits to Canadian manufacturers from mechanization of farming throughout North America.
Breweries.....	4.4	Higher per capita income.
Iron castings.....	4.3	Rapid growth of pipe manufacture for pipelines in mid-1950s (steel pipe classified to this industry even though not cast).
Furniture.....	4.3	Dwelling completions rose 4.4 p.c. per year over same period (though correlation of year-to-year changes in furniture output with completions is low and furniture includes non-household types).
Smelting and refining.....	4.2	Growth of export markets; especially, per capita manufacturing production in U.S.
Pulp and paper.....	4.0	Growth of income in export markets (however, depressing effect from rise of television broadcasting industry in U.S. and Canada).
Canning and processing.....	3.5	Rising per capita income; technological impact from development of frozen foods.
Sawmills.....	3.1	Increase in share of U.S. lumber market in recent years (but some of long-term growth of that market lost to U.S. plywood industry).
Meat products.....	3.1	Population growth, but higher incomes have switched demand to beef. (This industry does not cover all poultry processing, which rose sharply over this period.)
Grain mills.....	2.8	Technological change; expansion of use of prepared feeds and concentrates by farmers. (This kept the industry just ahead of population growth, as flour exports declined and domestic flour shipments rose little over period.)

\* Industries in which growth rate exceeded the average for all manufacturing.

† Industries in which growth rate exceeded that of population but fell below the average for all manufacturing.

Individual industries where the physical volume of production increased less rapidly than population during the 1946-65 period were: bakery products (2.5 p.c. a year); domestic clay products (2.4 p.c.); brass and copper products (2.3 p.c.); boots and shoes (2.0 p.c.); cotton goods (1.7 p.c.); and shipbuilding and repair (0.3 p.c.). Two regularly published individual industry indexes showed declining trends over the postwar period: wool goods (-1.1 p.c.) and railway rolling-stock (-3.3 p.c.).

## Section 2.—Exports of Manufactured Goods

It will be observed in the statement on p. 668 that the industry groups well known for exporting a substantial proportion of their output—Paper products, Non-ferrous metal products, and Wood products—were not among those growing more rapidly than manufacturing as a whole over the postwar period. But, as already mentioned, the manufacturing industries appear to have approximately maintained the proportion of their production which is exported and, in very recent years, there has been a marked uptrend in exports of highly manufactured goods.

In stating that the ratio of exports of manufactured goods to manufacturers' shipments has been maintained, the first three postwar years are excluded from consideration because exports of manufactured goods were abnormally high in the unusual conditions of that period. However, in the years since then, exports of fabricated materials and end-products (approximately equivalent to exports of manufactured goods) were equal to the following percentages of the value of manufacturers' shipments of goods of their own manufacture:—

	p.c.		p.c.		p.c.
1949.....	15.8	1955.....	15.3	1961.....	15.5
1950.....	15.7	1956.....	14.4	1962.....	15.3
1951.....	16.2	1957.....	14.4	1963.....	15.4
1952.....	16.5	1958.....	14.1	1964.....	16.6
1953.....	15.1	1959.....	14.1		
1954.....	15.4	1960.....	15.0		

There are some discontinuities in the shipments figures used above but the effect on the percentages is not great. However, for the 1949-55 period, the annual percentages averaged 14.6; for the 1956-60 period, 14.4; and for the 1961-64 period, 15.7.

As for exports of manufactured goods (deflated for price changes), the following statement shows the average annual percentage increases in the physical volume of different classes of exports over specified periods:\*

	<i>Annual Averages</i>		
	<i>1946-65</i>	<i>1956-65</i>	<i>1961-65</i>
	p.c.	p.c.	p.c.
Crude materials.....	6.3	5.4	8.1
Manufactured goods—†			
Fabricated materials.....	3.9	4.9	6.7
End-products.....	1.1	11.5	21.9
ALL DOMESTIC EXPORTS.....	4.1	6.0	9.5

The recent strong upward movement in exports of end-products is conspicuous; machinery and other highly manufactured goods have figured strongly in these increases.

\* These growth rates are derived from data of the External Trade Division of the DBS (see Chapter XXII on Foreign Trade).

† The classes shown are approximately equivalent to exports of manufactured goods.



### Section 3.—Trends in Principal Statistics, 1957-64

When the revised (1960) standard industrial classification was introduced, previously published statistics for the 1957-59 period were re-compiled on the same basis. Thus, with the publication of 1964 data, eight years of principal statistics of the manufacturing industries became available under the revised classification system. As the reader may find some value or interest in trends revealed by these eight years of statistics, average annual rates of change are included in this Section for a selection of series.\* The 1957-64 period is not represented as having any special advantages for the measurement of trends—it is simply the longest period available for all the industry groups of the revised classification. The dollar figures, of course, include the effect of price changes, so that these trends are not "growth rates" in the sense of measuring the physical volume of the industries involved; postwar growth rates of the physical volume of various manufacturing industries, using the 1948 standard industrial classification, are discussed in Section 1, pp. 673-675.

Table 1, which shows the year-to-year percentage changes in the value of shipments of goods of own manufacture for the period 1957-65 as well as the changes over the periods 1957-64 and 1961-64, makes possible the ready identification of years of greatest or least increase during the period or a comparison of various industry groups as to relative changes in particular years; increases for 1965 over 1964 are based on preliminary 1965 figures from a monthly survey.†

Table 2 shows the average annual percentage changes in various statistics of manufacturing activity for the 1957-64 period and Table 3 gives another selection of average annual percentage changes for the 1961-64 period, covering both manufacturing activity and total activity. The introduction in 1961 of the measurement of total activity, i.e., the inclusion of the non-manufacturing activity of manufacturing establishments, made a substantial change in the content of statistics on total employees and total salaries and wages compared with previous years, so that these statistics are included only in the 1961-64 table. The 1961-64 period possesses some intrinsic interest since the latest expansionary phase of the business cycle began in early 1961 and continued through 1964. The ranking of the industry groups in Table 3 reflects in considerable degree their susceptibility to variation in activity with fluctuations in the business cycle. (Thus, of course, these average annual rates of increase are not representative of long-term rates of increase.)

Over the 1946-64 period, the value of shipments of goods of own manufacture of all manufacturing industries increased at an average annual rate of 6.7 p.e.

\* Average annual percentage rates of change have been calculated by the least squares of logarithms method. For certain annual Census of Manufactures data, the series were "spliced" to adjust them for certain discontinuities before carrying out the computations.

† DBS publication *Inventories, Shipments and Orders in the Manufacturing Industries* (Catalogue No. 31-001).

#### 1.—Year-to-Year Percentage Changes, 1957-65, and Average Annual Percentage Changes, 1957-64, in Shipments of Goods of Own Manufacture, by Industry Group

(The change is an increase except where the minus sign is used.)

Industry Group	Year-to-Year Percentage Changes								Average Annual Percentage Changes	
	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65 <sup>p</sup>	1957-64	1961-64
Food and beverage industries.....	8.5	3.0	1.0	5.1	6.8	6.2	7.2	4.4	5.0	6.7
Tobacco products industries.....	22.5	6.4	3.0	0.2	3.5	2.7	-2.0	7.8	4.0	1.5
Rubber industries.....	-6.0	12.5	-7.2	0.8	6.9	9.3	10.3	10.6	3.3	8.9
Leather industries.....	4.1	8.9	-2.7	9.6	6.2	1.7	4.3	-0.8	4.6	3.8
Textile industries.....	-1.5	8.3	1.3	10.0	12.2	12.1	9.5	5.0	7.8	11.3
Knitting mills.....	0.5	9.2	4.7	9.9	6.4	9.0	8.9	7.6	7.2	8.2
Clothing industries.....	-0.1	2.4	1.5	5.1	7.2	7.4	7.3	3.6	4.5	7.3
Wood industries.....	1.3	6.2	-0.8	2.8	11.4	10.6	9.3	6.9	5.6	10.5

**1.—Year-to-Year Percentage Changes, 1957-65, and Average Annual Percentage Changes, 1957-64, in Shipments of Goods of Own Manufacture, by Industry Group—concluded**

Industry Group	Year-to-Year Percentage Changes								Average Annual Percentage Changes	
	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65 <sup>p</sup>	1957-64	1961-64
Furniture and fixture industries....	0.7	6.7	1.1	5.9	7.5	9.1	11.6	5.5	5.9	9.3
Paper and allied industries.....	0.9	7.2	4.7	3.8	5.9	5.1	10.4	5.3	5.3	6.9
Printing, publishing and allied industries.....	5.4	8.4	5.1	3.1	4.5	3.8	6.0	..	5.0	4.7
Primary metal industries.....	-11.0	16.6	6.4	2.8	6.9	7.3	14.7	10.3	6.4	9.3
Metal fabricating industries.....	-2.0	9.0	-0.6	5.7	14.3	8.8	13.8	9.0	6.9	11.9
Machinery industries.....	-8.7	12.7	3.8	0.3	13.9	17.9	21.9	6.6	8.3	17.9
Transportation equipment industries	-8.5	-3.1	-0.6	-1.9	27.0	20.2	13.5	23.2	6.5	20.1
Electrical products industries.....	-7.3	6.1	0.3	3.4	15.0	11.2	10.3	11.6	5.9	12.0
Non-metallic mineral products industries.....	5.2	9.2	-2.5	5.6	14.2	4.6	13.8	7.5	6.5	10.1
Petroleum and coal products industries.....	-0.3	7.3	3.2	6.1	6.1	5.5	3.9	-0.1	4.9	5.2
Chemical and chemical products industries.....	8.7	6.2	3.6	5.6	7.5	6.6	9.3	8.9	6.4	7.7
Miscellaneous manufacturing industries.....	7.8	10.3	5.1	12.3	11.2	8.4	10.0	5.1	9.4	9.7
<b>All Manufacturing Industries</b>	<b>-0.1</b>	<b>6.5</b>	<b>2.0</b>	<b>4.1</b>	<b>10.0</b>	<b>8.6</b>	<b>10.1</b>	<b>8.0</b>	<b>5.9</b>	<b>9.5</b>

**2.—Average Annual Percentage Changes in Selected Series of Manufacturing Activity, by Industry Group, 1957-64, Ranked according to Percentage Increase in Shipments**

(The change is an increase except where the minus sign is used.)

Rank	Industry Group	No. of Production Workers			Total Wages	Cost of Fuel and Electricity	Cost of Materials and Supplies Used	Value of Shipments of Goods of Own Manufacture
		Male	Female	Total				
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1	Miscellaneous manufacturing industries.....	4.1	4.6	4.3	8.2	6.1	10.5	9.4
2	Machinery industries.....	2.4	2.0	2.4	6.3	3.7	9.9	8.3
3	Textile industries.....	2.0	1.3	1.8	5.9	2.3	7.9	7.8
4	Knitting mills.....	0.5	0.5	0.5	4.1	1.0	9.3	7.2
5	Metal fabricating industries.....	2.1	2.8	2.2	5.5	3.8	8.1	6.9
6	Non-metallic mineral products.....	1.4	1.7	1.4	5.1	1.5	7.6	6.5
7	Transportation equipment industries.....	-0.6	4.8	-0.4	4.2	1.7	7.9	6.5
8	Primary metal industries.....	0.8	2.6	0.8	4.4	4.0	7.2	6.4
9	Chemical and chemical products industries.....	--	-0.5	-0.1	3.7	5.1	5.9	6.4
10	Electrical products industries.....	0.5	4.7	1.7	4.3	3.5	6.3	5.9
11	Furniture and fixture industries..	1.4	3.5	1.6	5.2	2.7	5.9	5.9
12	Wood industries.....	0.6	0.4	0.6	5.0	8.8	5.5	5.6
13	Paper and allied industries.....	1.0	-1.1	0.7	4.6	3.7	5.2	5.3
14	Printing, publishing and allied industries.....	-0.1	--	-0.1	4.0	3.4	4.8	5.0
15	Food and beverage industries.....	0.1	-0.4	--	3.8	2.8	4.9	5.0
16	Petroleum and coal products industries.....	-2.7	-7.6	-2.7	1.1	5.6	4.7	4.9
17	Leather industries.....	-0.6	1.8	0.5	4.3	0.8	4.4	4.6
18	Clothing industries.....	-0.7	1.6	1.0	4.8	1.1	4.8	4.5
19	Tobacco products industries.....	2.8	-3.4	-0.7	3.4	7.9	2.7	4.0
20	Rubber industries.....	1.1	1.0	1.1	5.0	3.0	5.4	3.3
	<b>All Manufacturing Industries..</b>	<b>0.7</b>	<b>1.4</b>	<b>0.9</b>	<b>4.7</b>	<b>3.6</b>	<b>6.2</b>	<b>5.9</b>

**3.—Average Annual Percentage Change of Selected Series of the Manufacturing Activity, by Industry Group, 1961-64,  
Ranked according to Percentage Increase in Total Employees**

(The change is an increase except where the minus sign is used.)

Rank	Industry Group	MANUFACTURING ACTIVITY							TOTAL ACTIVITY		
		Production Workers		Cost of Fuel and Electricity	Cost of Materials and Supplies Used	Value of Shipments of Goods of Own Manufacture	Total Employees		Value Added		
		Number	Wages				p.c.	p.c.		Number	Salaries and Wages
				p.c.	p.c.	p.c.			p.c.		
1	Machinery industries (except electrical machinery).....	10.8	16.0	6.5	20.7	17.9	14.8	8.1	12.5	15.4	
2	Transportation equipment industries.....	8.4	14.4	7.2	23.0	20.1	16.8	7.5	12.8	15.9	
3	Metal fabricating industries (except machinery and transportation equipment industries).....	7.3	10.9	7.2	13.0	11.9	11.3	5.9	9.3	11.4	
4	Electrical products industries.....	7.1	10.7	7.2	12.5	12.0	11.6	5.6	8.7	11.6	
5	Rubber industries.....	7.2	11.0	6.2	11.6	8.9	8.6	4.7	8.4	9.1	
6	Textile industries.....	5.3	10.1	5.5	12.0	11.3	11.7	4.5	9.1	11.4	
7	Furniture and fixture industries.....	4.6	9.0	5.1	10.3	9.3	8.8	4.3	8.1	8.8	
8	Miscellaneous manufacturing industries.....	5.2	8.8	8.7	9.8	9.7	9.8	4.0	8.5	9.3	
9	Primary metal industries.....	3.5	6.9	6.1	10.5	9.3	8.6	3.6	7.0	8.8	
10	Non-metallic mineral products industries.....	3.5	7.7	5.7	11.0	10.1	9.7	3.6	7.4	10.1	
11	Wood industries.....	4.1	9.2	10.3	9.9	10.5	12.4	3.0	8.0	12.0	
12	Paper and allied industries.....	2.1	5.6	5.6	7.5	6.9	6.4	2.5	5.9	6.4	
13	Chemical and chemical products industries.....	2.0	5.6	5.4	8.5	7.7	7.3	2.1	5.9	7.9	
14	Tobacco products industries.....	1.6	4.6	8.3	2.2	1.5	2.7	1.2	3.9	3.1	
15	Clothing industries.....	2.6	7.3	3.5	7.9	7.3	7.0	1.1	5.3	7.0	
16	Food and beverage industries.....	0.2	4.5	4.8	6.9	6.7	6.1	0.6	4.8	6.4	
17	Knitting mills.....	2.0	6.5	2.9	10.4	8.2	6.6	0.3	5.1	6.7	
18	Printing, publishing and allied industries.....	-0.1	4.3	2.9	5.1	4.7	4.6	0.2	4.0	4.6	
19	Leather industries.....	0.5	4.7	3.0	2.4	3.8	5.3	-0.9	2.6	5.1	
20	Petroleum and coal products industries.....	-2.7	1.1	3.6	6.7	5.2	-0.2	-3.1	0.3	0.2	
	<b>All Manufacturing Industries.....</b>	<b>3.9</b>	<b>8.3</b>	<b>5.8</b>	<b>10.3</b>	<b>9.5</b>	<b>8.9</b>	<b>3.2</b>	<b>7.4</b>	<b>9.0</b>	



## Section 4.—Statistics of Manufacturing

## Subsection 1.—Major Historical and Current Statistics of Manufacturing

Statistics on manufacturing in Canada have been collected since 1870, originally in connection with the decennial or quinquennial censuses for the period 1870 to 1915 and, since 1917, through the annual Census of Manufactures. Although every effort has been made to maintain comparability in the statistics since 1917, as shown in Table 4, changes in coverage of industries, type of data collected and the method of its treatment have inevitably introduced discontinuities or lack of comparability in certain components. One such major change in concept occurred in 1952 when the gross value of products was replaced by the value of factory shipments. More recently, the introduction of the revised standard industrial classification in 1960 and the new establishment concept in 1961 led to a break in continuity with previous years. An indication of the effects of these revisions in classification and concept is given in Table 4 where statistics for the 1957-59 period are given on both the 1948 standard industrial classification and manufacturing activity concept and the revised (1960) standard industrial classification and new establishment concept. Under the latter concept, a manufacturing establishment (i.e., one whose major activity is manufacturing) is the smallest reporting unit capable of reporting all of the following: materials and supplies used, goods purchased for resale as such, fuel and power consumed, number of employees and their pay, inventories, and shipments or sales.

The introduction of the total activity concept in 1962 and its application to 1961 data produced a considerable amount of data on non-manufacturing activities of manufacturing industries and has resulted in the transfer of statistics on some items, such as office and administrative workers and working owners and partners, from manufacturing to total activity. Table 5 sets out summary statistics for manufacturing activity and total activity for 1961-64. It should be noted that the 1961 data in Table 5 are not directly comparable with those for the same year in Table 4.

## 4.—Summary Statistics of Manufactures, 1917-61

NOTE.—Figures for intervening years from 1918 to 1949, not included in this table, are given in the 1962 Year Book, p. 616. Statistics of manufacturing from 1870 have been published but between that year and 1917 figures are not on a basis comparable to the series given below; statistics for significant years appear in the 1943-44 Year Book, p. 363. Figures of the non-ferrous metal smelting industries were first included with manufactures in 1925.

Year	Estab- lish- ments	Employees <sup>1</sup>	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture <sup>2</sup>	Value of Shipments of Goods of Own Manufacture <sup>3</sup>
BASIS: INDUSTRIAL CLASSIFICATION IN USE PRIOR TO 1960						
	No.	No.	\$'000	\$'000	\$'000	\$'000
1917.....	21,845	606,523	497,802	1,539,679	1,281,132	2,820,811
1920.....	22,532	598,893	717,494	2,085,272	1,621,273	3,706,545
1925.....	20,981	522,924	569,944	1,571,788	1,167,937	2,816,865
1930 <sup>4</sup> .....	22,618	614,696	697,555	1,664,788	1,522,737	3,280,237
1935 <sup>4</sup> .....	24,034	556,664	559,468	1,419,146	1,153,485	2,653,911
1940.....	25,513	762,244	920,873	2,449,722	1,942,471	4,529,173
1945.....	29,050	1,119,372	1,845,773	4,473,669	3,564,316	8,250,369
1950 <sup>5</sup> .....	35,942	1,183,297	2,771,267	7,538,535	5,942,058	13,817,526
1951.....	37,021	1,258,375	3,276,281	9,074,526	6,940,947	16,392,187
1952.....	37,929	1,288,382	3,637,620	9,146,172	7,443,533	16,982,687
1953.....	38,107	1,327,451	3,957,018	9,380,559	7,993,089	17,785,417
1954.....	38,028	1,267,966	3,896,688	9,241,858	7,902,124	17,554,528
1955.....	38,182	1,298,461	4,142,410	10,338,202	8,753,450	19,513,934
1956.....	37,428	1,353,020	4,570,692	11,721,537	9,605,425	21,636,749
1957.....	37,875	1,359,061	4,819,628	11,900,752	9,822,085	22,183,594
1958.....	36,741	1,289,602	4,802,496	11,821,567	9,454,955	22,163,186
1959.....	36,193	1,303,956	5,073,074	12,552,201	10,320,963	23,311,601

For footnotes, see end of table, p. 680.

## 4.—Summary Statistics of Manufactures, 1917-61—concluded

Year	Estab- lish- ments	Employees <sup>1</sup>	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture <sup>2</sup>	Value of Shipments of Goods of Own Manufacture <sup>3</sup>
BASIS: REVISED STANDARD INDUSTRIAL CLASSIFICATION AND NEW ESTABLISHMENT CONCEPT						
	No.	No.	\$'000	\$'000	\$'000	\$'000
1957.....	33,551	1,340,948	4,778,040	11,698,789	9,454,954	21,452,343
1958.....	32,446	1,272,686	4,758,614	11,630,825	10,154,277	21,434,815
1959.....	32,075	1,287,809	5,030,128	12,339,558	10,371,284	22,830,827
1960.....	32,852	1,275,476	5,150,503	12,451,637	10,682,138	23,279,804
1961.....	32,415	1,264,946	5,231,447	13,127,708		24,243,295

<sup>1</sup> Includes working owners and partners.<sup>2</sup> For 1924-51, inclusive, the value added by manufacture is computed by subtracting cost of fuel, electricity and materials from gross value of products; for 1952 and 1953 the deduction is made from value of factory shipments and for 1954 and subsequent years from the calculated value of production. Figures prior to 1924 are not comparable because statistics for cost of electricity are not available.<sup>3</sup> Prior to 1952, gross value of products.<sup>4</sup> A change in the method of computing the number of employees in the years 1925 to 1930, inclusive, increased the number somewhat over that which the method otherwise used would have given. In 1931, however, the method in force prior to 1925 was re-adopted.<sup>5</sup> Newfoundland is included from 1949 but figures for the fish processing industry for 1949 and 1950 are not available for that province and are not included.

## 5.—Summary Statistics of Manufactures, 1961-64

NOTE.—Based on the revised standard industrial classification and new establishment and total activity concepts. Figures in this table include poultry processors, book publishers, electroplating establishments, dental laboratories, and prescription branches in the ophthalmic goods manufactures industry, not included in Table 4.

MANUFACTURING ACTIVITY <sup>1</sup>								
Year	Estab- lish- ments	Production and Related Workers			Cost of Fuel and Elec- tricity <sup>2</sup>	Cost of Materials and Supplies Used	Value of Shipments of Goods of Own Manu- facture	Value Added
		Number	Man- Hours Paid	Wages				
	No.		'000	\$'000	\$'000	\$'000	\$'000	\$'000
1961.....	33,357	939,413	1,968,163	3,532,943	516,409	12,579,798	23,438,956	10,434,832
1962.....	33,414	974,376	2,071,376	3,834,514	540,447	13,974,877	25,790,087	11,429,644
1963.....	33,119	1,003,566	2,137,977	4,095,916	564,387	15,337,534	28,014,888	12,272,734
1964.....	33,631	1,057,502	2,265,189	4,513,634	615,109	16,928,476	30,856,103	13,535,994
TOTAL ACTIVITY								
Year	Estab- lish- ments	Working Owners and Partners <sup>3</sup>		Total Employees <sup>4</sup>		Total Cost of Materials and Supplies <sup>5</sup> Used and Goods Purchased for Re-sale	Total Operational Revenue <sup>6</sup>	Total Value Added <sup>7</sup>
		Number	With- drawals	Number	Salaries and Wages			
		No.			\$'000	\$'000	\$'000	\$'000
1961.....	33,357	16,989	57,980	1,352,605	5,701,651	14,564,247	25,895,611	10,931,561
1962.....	33,414	17,228	60,744	1,389,516	6,096,174	16,118,144	28,473,319	11,986,666
1963.....	33,119	16,030	59,426	1,425,440	6,495,289	17,558,196	30,823,107	12,875,073
1964.....	33,631	15,748	60,099	1,491,257	7,080,940	19,467,899	34,071,582	14,247,187

<sup>1</sup> Conceptually identical to previous years.<sup>2</sup> Cannot be reported separately for manufacturing and non-manufacturing activities but related substantially to manufacturing activity.<sup>3</sup> Included with administrative and office employees in Table 4.<sup>4</sup> Includes production and related workers, administrative and office employees, sales, distribution and other employees; excludes working owners and partners.<sup>5</sup> Includes supplies used in both manufacturing and non-manufacturing activity.<sup>6</sup> Includes shipments of goods of own manufacture, value of shipments of goods purchased for re-sale and other operational revenue.<sup>7</sup> Value of total operational revenue less total cost of materials, supplies, fuel and electricity used and goods purchased for re-sale in the same condition; all adjusted for inventory changes where required.

## 6.—Summary Statistics of Manufactures, by Industry Group, 1961-64

NOTE.—Based on the revised standard industrial classification and new establishment and total activity concepts.

Industry Group and Year	Estab-lish-ments	MANUFACTURING ACTIVITY <sup>1</sup>					TOTAL ACTIVITY			
		Production and Related Workers			Cost of Fuel and Elec-tricity <sup>2</sup>	Cost of Materials and Supplies Used	Value of Ship-ments and of Goods of Own Manu-facture	Working Owners and Partners		Total Employees <sup>3</sup>
		Number	Man-Hours Paid	Wages				Number	With-drawals	
	No.			\$'000	\$'000	\$'000	\$'000		\$'000	\$'000
Food and beverage industries.....	7,734	129,977	276,376	425,211	71,226	3,273,280	5,039,544	4,437	14,561	210,762
1961	7,678	129,052	277,031	441,703	74,591	3,515,847	5,381,572	4,386	15,911	210,312
1962	7,628	128,082	274,258	455,475	77,455	3,764,887	5,714,198	4,127	15,345	210,119
1963	7,407	131,120	281,606	485,824	82,125	3,998,764	6,127,245	3,925	15,050	214,985
1964										
Tobacco products industries.....	37	7,854	16,513	30,069	1,034	206,584	334,930	8	39	10,392
1961	39	8,413	16,975	31,963	1,289	212,294	346,517	7	31	11,137
1962	38	8,583	16,779	33,888	1,404	220,995	355,981	7	17	11,011
1963	39	8,219	16,039	34,288	1,309	218,876	348,811	4	s	10,867
1964										
Rubber industries.....	93	14,298	30,644	57,524	5,276	150,069	331,135	10	33	21,821
1961	90	15,664	34,117	66,331	5,550	170,771	353,930	9	31	22,788
1962	93	16,879	36,187	71,846	5,921	189,212	386,730	10	32	24,162
1963	95	17,575	38,175	79,354	6,315	208,955	426,624	7	27	24,972
1964										
Leather industries.....	556	27,543	56,399	70,972	2,275	151,426	291,161	193	736	33,283
1961	547	28,009	58,015	75,708	2,353	161,979	309,178	181	700	32,960
1962	559	28,037	57,624	77,683	2,414	158,129	314,533	184	733	32,647
1963	543	27,994	57,419	82,075	2,488	165,445	328,055	179	692	32,404
1964										
Textile industries.....	884	50,274	108,700	150,532	15,114	470,792	874,487	383	1,581	64,969
1961	895	52,929	113,872	164,827	15,758	540,706	981,379	326	1,432	67,918
1962	922	55,193	119,620	178,984	16,298	601,691	1,099,838	345	1,727	70,276
1963	939	58,963	128,674	202,035	17,844	663,672	1,204,563	332	1,724	74,455
1964										
Knitting mills.....	358	18,667	39,272	44,990	1,927	117,069	219,378	95	382	22,691
1961	351	19,161	40,597	47,412	2,014	131,488	233,506	80	385	22,816
1962	359	19,457	41,385	49,855	1,994	144,125	254,611	75	338	22,573
1963	394	19,840	42,743	54,623	2,125	157,821	277,347	70	298	22,972
1964										
Clothing industries.....	2,307	76,741	149,756	180,890	3,018	427,256	802,719	1,066	4,841	93,306
1961	2,308	76,729	153,659	193,001	3,098	461,695	860,477	1,022	4,676	91,632
1962	2,294	78,736	157,995	204,124	3,167	501,017	924,223	969	4,461	92,305
1963	2,335	82,945	165,950	224,443	3,355	536,363	991,729	935	4,397	96,408
1964										

For footnotes, see end of table, p. 683.



6.—Summary Statistics of Manufactures, by Industry Group, 1961-64—concluded

Industry Group and Year	MANUFACTURING ACTIVITY <sup>1</sup>										TOTAL ACTIVITY			
	Estab-lish-ments	Production and Related Workers			Cost of Fuel and Elec-tricity <sup>2</sup>	Cost of Materials and Supplies Used	Value of Ship-ments of Goods of Own Manu-facture	Value Added	Working Owners and Partners		Total Employees <sup>3</sup>		Total Value Added <sup>4</sup>	
		Number	Man-Hours Paid	Wages					Number	With-drawals	Number	Salaries and Wages		
	No.		'000	\$'000	\$'000	\$'000	\$'000	\$'000		\$'000		\$'000	\$'000	
Wood industries.....	1961	5,243	67,532	138,132	226,212	20,400	581,239	1,036,179	436,501	3,244	7,114	82,085	292,700	451,553
	1962	5,017	70,279	150,220	247,957	23,628	624,133	1,154,377	510,470	3,737	8,484	88,480	311,975	521,704
	1963	4,779	72,836	155,521	269,759	25,176	685,784	1,276,848	571,917	3,315	7,803	80,888	340,730	586,881
	1964	4,595	76,278	164,330	295,097	27,750	771,101	1,395,915	621,144	3,166	7,063	89,407	367,003	634,741
Furniture and fixture industries.....	1961	2,087	26,740	57,296	83,007	3,892	173,242	359,574	184,074	1,586	5,370	33,475	117,119	187,328
	1962	2,144	27,601	60,511	90,282	4,085	187,748	386,569	198,655	1,568	5,319	34,362	123,172	201,416
	1963	2,104	28,874	63,128	96,988	4,156	205,833	421,599	214,166	1,511	5,299	35,916	131,442	217,792
	1964	2,216	30,598	66,829	107,961	4,561	232,607	470,312	237,771	1,576	5,621	37,985	145,201	242,077
Paper and allied industries.....	1961	567	76,058	164,212	352,948	122,271	1,020,320	2,203,517	1,070,299	49	211	98,292	493,444	1,082,526
	1962	580	77,141	168,182	369,715	127,953	1,080,364	2,333,578	1,130,652	58	267	100,075	518,784	1,146,972
	1963	591	77,719	169,733	383,217	132,166	1,140,388	2,452,437	1,181,141	54	251	101,556	541,195	1,193,387
	1964	605	81,397	179,309	418,590	144,998	1,274,800	2,707,345	1,296,089	58	270	103,309	585,358	1,313,675
Printing, publishing and allied industries.....	1961	3,450	43,448	89,599	187,394	6,534	271,522	854,832	578,207	1,905	7,656	75,193	343,620	589,584
	1962	3,485	42,849	87,149	196,312	6,828	284,078	893,722	604,461	1,572	7,604	74,544	355,096	614,113
	1963	3,452	43,419	88,205	203,922	6,886	298,383	927,922	625,397	1,753	7,601	75,166	371,074	635,891
	1964	3,439	43,132	88,980	213,007	7,159	315,504	983,921	665,065	1,687	7,646	75,448	385,087	676,013
Primary metal industries <sup>6</sup> .....	1961	407	69,655	145,183	348,088	88,754	967,869	1,935,996	883,488	85	310	89,956	475,320	898,608
	1962	398	71,127	149,919	363,650	88,710	1,057,236	2,089,840	930,098	81	366	91,713	496,878	946,588
	1963	394	72,352	154,312	383,355	93,346	1,147,133	2,220,977	998,795	75	318	94,107	528,422	1,015,942
	1964	398	77,770	167,520	427,710	103,304	1,312,564	2,546,923	1,136,495	65	285	100,407	583,191	1,163,390
Metal fabricating industries (except machinery and transportation equipment industries)	1961	2,964	72,156	151,367	300,215	19,718	735,817	1,510,625	754,549	1,251	4,873	101,054	457,887	788,347
	1962	3,009	73,441	168,397	341,602	21,463	861,867	1,725,984	855,500	1,295	5,237	109,575	509,582	896,432
	1963	3,116	83,185	178,170	368,172	22,505	946,412	1,877,234	918,635	1,176	5,035	113,278	543,982	962,909
	1964	3,455	89,873	193,080	413,120	24,479	1,071,812	2,137,178	1,053,596	1,328	5,834	121,021	602,707	1,101,784
Machinery industries (except electrical machinery).....	1961	544	28,179	59,130	121,473	6,931	308,487	658,319	354,158	76	421	50,639	243,436	444,144
	1962	572	31,016	65,897	140,037	7,119	359,712	749,648	402,871	74	398	54,439	271,661	515,938
	1963	599	34,489	72,951	161,482	7,416	431,005	884,082	448,739	80	520	58,912	305,715	575,355
	1964	650	38,275	82,372	189,959	8,441	542,735	1,077,692	540,502	78	418	63,912	346,553	691,004

Transportation equipment in- dustries.....	1961	1962	1963	1964	70,320	148,011	321,271	18,087	1,075,697	1,845,755	770,579	306	932	90,280	494,028	840,763
	659	70,320	148,011	321,271	18,087	1,075,697	1,845,755	770,579	306	932	90,280	494,028	840,763			
	862	75,601	166,085	373,086	19,773	1,392,697	2,345,370	936	1,392,697	2,345,370	936	1,392,697	2,345,370			
	780	80,706	178,267	421,953	21,027	1,716,958	2,817,797	1,131,133	1,716,958	2,817,797	1,131,133	1,716,958	2,817,797			
	744	90,123	196,269	453,049	22,336	2,002,734	3,197,689	1,218,498	2,002,734	3,197,689	1,218,498	2,002,734	3,197,689			
Electrical products industries.....	533	51,904	108,483	203,006	11,338	585,050	1,208,298	619,455	585,050	1,208,298	619,455	38	173	80,360	409,559	670,529
	531	58,029	122,113	233,250	12,145	670,945	1,389,633	738,027	670,945	1,389,633	738,027	36	104	96,595	453,357	811,119
	545	61,241	128,594	254,017	13,171	750,534	1,545,046	781,881	750,534	1,545,046	781,881	40	223	101,235	487,770	863,400
	578	64,079	136,979	277,019	13,918	835,358	1,703,964	874,059	835,358	1,703,964	874,059	40	268	105,414	527,084	959,657
Non-metallic mineral products industries.....	1,263	31,777	69,673	129,638	46,566	251,449	676,025	381,031	251,449	676,025	381,031	471	1,388	43,320	210,818	304,800
	1,327	33,680	74,111	143,593	50,815	290,357	771,771	435,967	290,357	771,771	435,967	511	1,507	45,471	216,000	323,841
	1,329	33,740	74,203	148,303	51,709	305,698	807,145	451,730	305,698	807,145	451,730	447	1,514	46,043	218,356	323,567
	1,336	35,598	79,761	164,303	55,685	350,358	918,237	512,931	350,358	918,237	512,931	444	1,563	48,501	240,129	357,333
Petroleum and coal products in- dustries.....	91	7,769	16,630	43,092	11,351	920,680	1,219,178	289,633	920,680	1,219,178	289,633	4	18	16,392	100,310	287,960
	89	7,494	16,175	43,571	10,850	1,003,805	1,294,070	283,232	1,003,805	1,294,070	283,232	4	16	16,277	104,410	284,199
	84	7,281	15,725	43,369	11,337	1,355,637	284,797	284,797	1,355,637	284,797	284,797	4	14	15,398	101,032	286,749
	89	7,168	15,623	44,784	12,579	1,114,090	1,418,528	286,722	1,114,090	1,418,528	286,722	2	5	15,009	102,598	289,598
Chemical and chemical products industries.....	1,067	31,694	67,832	137,070	54,660	623,024	1,435,752	763,747	623,024	1,435,752	763,747	185	612	63,357	318,709	508,526
	1,080	31,602	67,308	141,629	55,047	666,323	1,543,081	824,592	666,323	1,543,081	824,592	192	669	63,905	322,577	514,701
	1,093	32,511	69,920	150,881	59,901	719,705	1,644,786	870,646	719,705	1,644,786	870,646	165	598	65,494	335,034	523,749
	1,140	33,555	72,168	160,579	63,677	797,816	1,798,065	949,649	797,816	1,798,065	949,649	179	581	67,433	377,408	1,019,544
Miscellaneous manufacturing in- dustries.....	2,463	36,827	77,054	119,353	5,977	268,915	600,523	329,475	268,915	600,523	329,475	1,497	6,731	52,978	199,974	399,255
	2,532	38,560	82,070	129,156	6,368	300,831	667,433	369,303	300,831	667,433	369,303	1,463	6,518	54,580	213,603	408,944
	2,557	40,246	85,401	138,644	6,943	328,250	723,334	399,989	328,250	723,334	399,989	1,389	6,618	56,532	231,272	433,749
	2,664	43,000	91,361	154,515	7,661	357,043	765,993	439,560	357,043	765,993	439,560	1,370	6,727	59,579	255,453	487,578
Totals.....	33,337	939,413	1,968,163	3,532,943	516,409	12,579,798	23,438,956	10,434,832	12,579,798	23,438,956	10,434,832	16,989	57,980	1,332,695	5,701,651	10,931,561
	33,414	974,376	2,071,376	3,834,514	540,447	13,974,877	25,790,087	11,429,644	13,974,877	25,790,087	11,429,644	17,228	60,744	1,339,516	6,096,174	11,986,066
	33,119	1,003,566	2,137,977	4,095,916	564,387	15,337,534	28,014,888	12,272,734	15,337,534	28,014,888	12,272,734	16,030	59,426	1,425,446	6,435,359	12,875,973
	33,630	1,057,502	2,265,188	4,515,633	615,108	16,928,476	30,856,099	13,535,991	16,928,476	30,856,099	13,535,991	15,747	60,098	1,491,257	7,059,939	14,247,184

<sup>1</sup> Conceptually identical to previous years.  
<sup>2</sup> Cannot be reported separately for manufacturing and non-manufacturing activities but related substantially to manu-  
facturing activity.  
<sup>3</sup> Includes production and related workers, administrative and office employees, sales, distribution and other employees.  
<sup>4</sup> Value of total  
shipments and other operational revenue less total cost of materials, supplies, fuels used and purchases of products and materials for re-sale in the same condition; all adjusted  
for inventory changes where required.

<sup>5</sup> Confidential.

<sup>6</sup> Incorporates revised basis of valuation for smelting and refining.

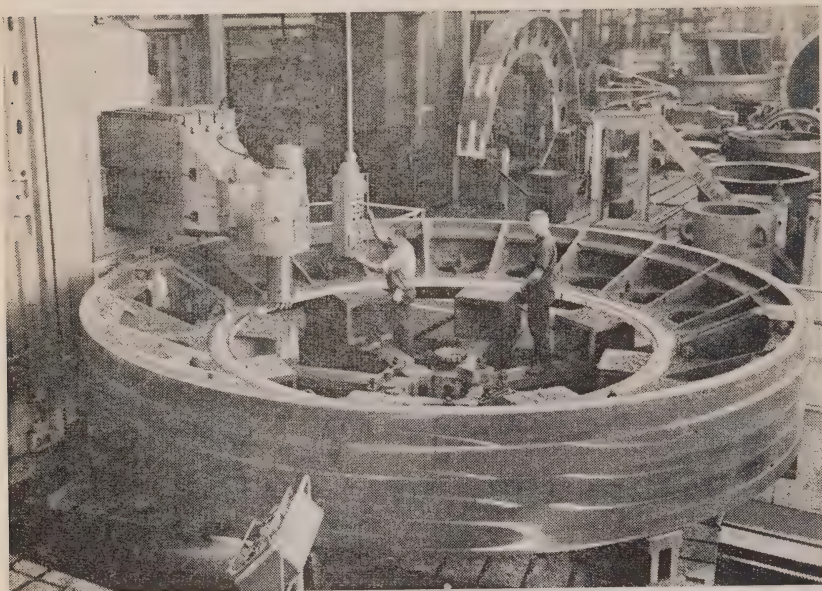
7. Summary Statistics of the Forty Leading Industries, 1961  
(Ranked according to value of shipments of goods of own manufacture)

Rank	Industry	Estab-lish-ments	MANUFACTURING ACTIVITY <sup>1</sup>							TOTAL ACTIVITY				
			Production and Related Workers			Cost of Fuel and Elec- tricity <sup>2</sup>	Cost of Materials and Supplies Used	Value of Ship-ments of Goods of Own Manu- facture	Working Owners and Partners		Total Employees <sup>3</sup>		Total Value Added <sup>4</sup>	
			Number	Man- Hours Paid	Wages				Number	With- drawsals	Number	Salaries and Wages		
		No.	'000	\$'000	\$'000	\$'000	\$'000	\$'000		\$'000		\$'000	\$'000	
1	Pulp and paper mills.....	131	56,429	125,288	315,973	138,461	846,406	1,984,114	2	5	67,729	394,136	1,011,391	
2	Motor vehicle manufacturers...	18	24,860	55,921	163,790	6,720	1,206,433	1,678,817	—	—	36,026	234,551	548,077	
3	Petroleum refining.....	41	6,535	14,268	41,881	11,950	1,089,131	1,371,340	—	—	9,547	63,872	268,604	
4	Slaughtering and meat packing plants.....	265	19,305	41,144	90,898	6,916	972,609	1,198,417	100	343	26,316	129,358	230,822	
5	Iron and steel mills.....	42	33,911	73,408	200,756	41,442	512,009	1,108,152	—	—	41,505	253,039	568,680	
6	Dairy factories.....	1,535	13,642	30,600	51,202	18,767	687,843	939,241	575	2,161	31,756	131,065	253,175	
7	Sawmills and planing mills. ....	2,910	43,646	93,831	173,699	19,206	471,809	845,669	2,152	4,558	50,328	209,195	376,328	
8	Smelting and refining <sup>6</sup> .....	23	23,239	48,900	126,109	52,988	314,567	718,254	—	—	30,153	174,450	364,749	
9	Miscellaneous machinery and equipment manufacturers.....	496	24,985	53,772	120,430	5,245	338,975	688,205	54	299	39,396	204,795	392,587	
10	Motor vehicle parts and acces- sories manufacturers.....	154	23,845	52,262	127,727	7,148	354,258	627,966	20	127	29,442	168,183	285,814	
11	Manufacturers of industrial chemicals.....	132	11,591	25,408	66,074	49,075	247,626	617,570	—	—	18,045	109,190	344,057	
12	Miscellaneous food manufactur- ers.....	281	8,183	17,387	31,049	5,682	330,187	538,968	49	172	13,258	61,194	215,298	
13	Metal stamping, pressing and coating industry.....	615	19,438	41,713	88,262	5,713	290,430	532,526	159	681	25,192	124,511	250,259	
14	Commercial printing.....	1,957	23,896	50,124	110,124	3,197	172,912	442,185	1,079	4,804	33,560	169,353	274,158	
15	Bakeries.....	2,548	17,366	38,198	62,402	11,810	203,666	427,664	2,231	8,527	32,267	123,494	220,748	
16	Fruit and vegetable canners and preservers.....	326	14,384	30,399	42,689	5,155	249,449	414,755	86	303	18,813	66,842	172,304	
17	Printing and publishing.....	722	15,024	30,154	79,270	3,428	99,405	403,716	331	1,475	31,779	163,639	305,086	
18	Aircraft and parts manufactur- ers <sup>7</sup> .....	86	17,854	38,262	90,398	3,146	193,201	403,776	10	44	28,643	159,150	219,322	
19	Communications equipment manufacturers.....	143	19,621	42,185	82,345	2,029	157,996	401,791	6	34	30,627	150,448	261,456	



20	Synthetic textile mills.....	60	15,474	33,307	58,612	6,726	184,063	372,653	188,673	—	19,461	81,069	187,251
21	Feed manufacturers.....	800	4,539	9,924	16,612	5,569	283,766	364,162	75,108	396	1,552	33,845	93,246
22	Women's clothing factories.....	628	24,126	48,023	70,249	834	202,366	354,173	154,486	115	613	28,696	96,694
23	Men's clothing factories.....	485	29,172	58,353	78,608	1,171	196,203	351,279	159,332	127	671	33,746	104,814
24	Manufacturers of electrical industrial equipment.....	119	12,659	28,265	64,270	2,857	122,292	328,455	204,314	3	20,447	111,967	210,538
25	Wire and wire products manufacturers.....	225	11,212	24,720	55,518	3,785	183,533	323,013	138,349	38	151	14,850	78,365
26	Miscellaneous metal fabricating industries.....	384	13,589	28,950	60,482	5,044	145,460	306,095	158,130	108	494	18,088	87,041
27	Cotton yarn and cloth mills.....	34	15,082	33,090	53,284	4,632	174,589	298,785	120,867	—	—	18,134	68,449
28	Flour mills.....	55	2,617	5,768	11,994	1,865	238,272	295,056	54,745	14	61	4,503	21,439
29	Breweries.....	51	4,999	10,684	27,446	3,677	75,195	291,237	212,324	—	—	9,247	55,772
30	Fabricated structural metal industry <sup>1</sup> .....	89	10,713	21,667	56,748	2,216	144,774	278,092	131,253	4	14,602	82,112	143,196
31	Manufacturers of major appliances (electric and non-electric).....	39	9,233	19,340	41,109	3,134	153,077	269,620	118,672	1	12,934	61,269	122,712
32	Household furniture industry.....	1,652	18,022	39,368	61,861	2,357	128,695	257,664	129,990	1,317	4,523	21,794	81,493
33	Tobacco products manufacturers.....	21	6,588	12,747	29,659	857	132,160	250,934	120,933	4	8,956	43,260	123,392
34	Fish products industry.....	371	12,638	26,900	33,107	4,002	157,599	244,484	83,335	107	284	15,979	45,460
35	Agricultural implement industry.....	94	9,569	20,488	51,496	2,494	135,176	243,963	114,022	15	46	12,474	68,448
36	Other paper converters.....	204	8,395	18,166	34,092	2,411	132,949	236,412	102,532	23	119	11,795	54,371
37	Shipbuilding and repair <sup>1</sup> .....	65	13,970	29,738	69,907	2,067	96,011	234,393	136,322	3	17,137	86,870	138,167
38	Sugar refineries.....	13	2,459	5,456	11,333	3,039	168,475	228,272	46,879	—	—	3,205	16,859
39	Manufacturers of electric wire and cable.....	25	5,061	11,379	25,466	2,336	146,464	227,178	79,243	1	7,199	38,565	81,210
40	Rubber tire and tube manufacturers.....	11	6,665	14,653	36,965	3,193	122,393	225,728	104,395	—	—	8,520	48,491
<b>Totals, Leading Industries..</b>										<b>9,130</b>	<b>32,153</b>	<b>904,331</b>	<b>4,457,118</b>
<b>Totals, All Manufacturing Industries.....</b>		<b>17,940</b>	<b>655,256</b>	<b>1,404,710</b>	<b>3,003,896</b>	<b>462,344</b>	<b>12,062,424</b>	<b>21,327,774</b>	<b>8,948,256</b>	<b>15,747</b>	<b>60,098</b>	<b>1,491,257</b>	<b>7,080,339</b>
		<b>33,630</b>	<b>1,057,502</b>	<b>2,265,188</b>	<b>4,513,633</b>	<b>615,108</b>	<b>16,928,476</b>	<b>30,856,099</b>	<b>13,535,991</b>				<b>14,247,184</b>

<sup>1</sup> Conceptually identical to previous years.<sup>2</sup> Cannot be reported separately for manufacturing and non-manufacturing activities but related substantially to manufacturing activity.<sup>3</sup> Includes production and related workers, administrative and office employees, sales, distribution and other employees.<sup>4</sup> Value of total shipments and other operational revenue less total cost of materials, supplies, fuels used and purchases of products and materials for re-sale in the same condition; all adjusted for inventory changes where required.<sup>5</sup> Confidential.<sup>6</sup> Revised basis of valuation.<sup>7</sup> Value of production, rather than value of shipments of goods of own manufacture, is shown.



A gear blank, 30 in diameter, being milled in a Mo engineering plant. This is the largest boring and drilling machine in Canada.

A complex of electrolytic cells produces chlorine gas and liquid caustic soda in a large new co-operative plant near Saskatoon, Sask.



### Volume of Manufacturing Production

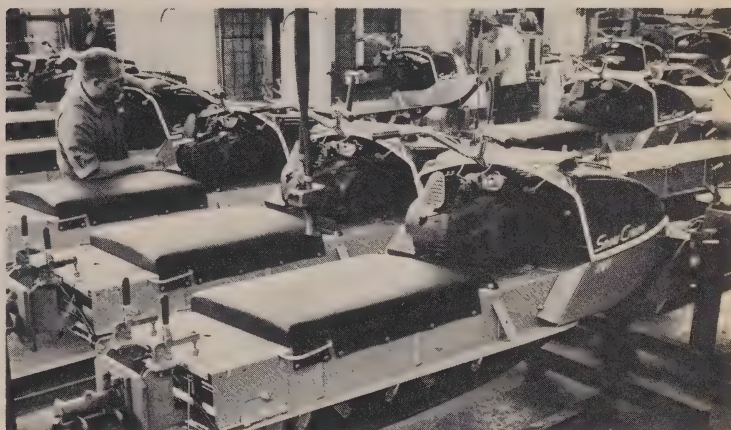
Since manufacturers' selling prices change and since production from other industries (and countries) is embodied in Canadian factory shipments, a measure of fluctuations and long-term growth in the physical volume of production within the Canadian manufacturing industry itself is desirable. Such a measure of volume, or real domestic production, is provided by the index of manufacturing production. This index differs from current statistics on the gross value of factory output in two important ways besides the exclusion of price change—it uses the 1948 rather than the revised 1960 standard industrial classification and it is designed to represent net production. The indexes in Table 8 represent a substantial revision to those published earlier. (For an examination of postwar rates of growth in these indexes, see Section 1, pp. 665-672.)



Electric stoves on the assembly line, nearing completion. The 321,000 electric stoves shipped from Canadian factories in 1966 had a value of nearly \$46,000,000.



The snowmobile industry had its best year in 1966-67 when Canadian sales reached an estimated 50,000. About 15 plants manufacture snowmobiles in Canada, nine of them in Quebec.



The food processing industries, which are varied and numerous, have undergone considerable change in recent years. Here beans are inspected at an Ontario cannery after they have been trimmed in revolving drums.



Photos by:

Dominion Engineering Works Ltd., Montreal, Que.  
Interprovincial Co-operatives Ltd., Winnipeg, Man.  
Canadian Westinghouse Company Limited, Hamilton, Ont.  
Outboard Marine Corporation of Canada Ltd., Peterborough, Ont.  
Canada Packers, Toronto, Ont.

## 8.—Indexes of Volume of Manufacturing Production for Major Industry Groups, 1961-66

(Ranked according to 1966 percentage increase over 1965)  
(1949=100)

Rank	Industry Group	1961	1962	1963	1964	1965	1966 <sup>p</sup>	Percentage Change	
								1964-65	1965-66 <sup>p</sup>
1	Electrical apparatus and supplies <sup>1</sup> ..	197.9	236.5	254.9	279.1	319.2	369.2	+14.4	+15.7
2	Miscellaneous manufacturing.....	292.3	302.0	353.0	386.5	407.3	449.4	+ 5.4	+10.3
3	Chemical products.....	250.3	262.9	282.5	312.7	344.7	377.7	+10.2	+ 9.6
4	Transportation equipment <sup>1</sup> .....	133.1	165.3	190.2	210.5	250.0	273.8	+18.8	+ 9.5
5	Paper products.....	156.7	163.7	170.1	186.3	198.3	216.1	+ 6.4	+ 9.0
6	Rubber products.....	158.6	182.5	207.4	232.8	237.4	258.5	+ 2.0	+ 8.9
7	Products of petroleum and coal....	274.0	291.1	318.0	330.1	345.9	371.6	+ 4.8	+ 7.4
8	Printing, publishing and allied industries.....	180.4	189.5	195.2	207.4	223.3	239.7	+ 7.7	+ 7.3
9	Food and beverages.....	159.1	167.3	172.2	185.6	193.1	204.9	+ 4.0	+ 6.1
10	Tobacco products.....	210.0	220.9	225.3	232.1	243.4	258.1	+ 4.9	+ 6.0
11	Iron and steel products <sup>1</sup> .....	156.6	174.5	191.0	215.2	239.1	252.9	+11.1	+ 5.8
12	Textile products.....	152.1	167.7	186.0	203.3	220.6	233.0	+ 8.5	+ 5.6
13	Non-ferrous metal products <sup>1</sup> .....	156.3	158.8	159.8	174.2	186.9	195.6	+ 7.3	+ 4.7
14	Clothing products.....	134.8	141.9	150.3	163.4	171.2	178.6	+ 4.8	+ 4.3
15	Non-metallic mineral products <sup>1</sup> ..	213.2	232.5	235.0	268.2	286.9	296.6	+ 7.0	+ 3.4
16	Wood products <sup>1</sup> .....	144.9	158.6	167.3	174.3	181.7	186.0	+ 4.2	+ 2.4
17	Leather products.....	126.9	130.8	132.1	137.3	135.2	136.9	- 1.5	+ 1.3
	Totals, non-durable manufacturing...	173.6	183.5	194.9	211.2	224.1	240.3	+ 6.1	+ 7.2
	Totals, durable manufacturing.....	158.9	178.5	192.9	212.7	237.2	254.7	+11.5	+ 7.4
	<b>All Manufacturing Industries</b>	<b>166.9</b>	<b>181.2</b>	<b>193.9</b>	<b>211.9</b>	<b>230.1</b>	<b>246.9</b>	<b>+ 8.6</b>	<b>+ 7.3</b>

<sup>1</sup> Durable manufactures; other groups are non-durable.

## Industry Selling Price Indexes

The most comprehensive, regularly published estimate of price changes in manufacturing is an unweighted average of industry selling price indexes which is issued monthly. There are currently 102 such indexes, each based on prices of a representative "basket" of products of a particular manufacturing industry. (They thus relate to gross rather than net production as defined in connection with the volume of manufacturing production.) Although the average of these is not a scientific, weighted measure of price changes in manufacturing, it gives some over-all indication of the direction and extent of price movements. The unweighted annual average of industry selling price indexes (1956 = 100) is as follows for years which they have been issued:—

1956.....	100.0	1960.....	102.7	1964.....	108.2
1957.....	101.7	1961.....	103.0	1965.....	109.1
1958.....	101.4	1962.....	104.1	1966.....	111.8 <sup>p</sup>
1959.....	102.4	1963.....	106.7		

Subsection 2.—Distribution of Manufacturing by Province  
and by Metropolitan Area

## Distribution by Province

Ontario and Quebec together accounted for 81.3 p.c. of the value added by manufacture in Canada in 1964—Ontario for 52.2 p.c. and Quebec for 29.1 p.c. British Columbia was responsible for 8.4 p.c., the Prairie Provinces for 6.7 p.c., and the Atlantic Provinces for 3.6 p.c. In Ontario, value added by manufacture averaged \$1,073 per capita of the population, in Quebec \$708, in British Columbia \$635, in the Prairie Provinces \$271 and in the Atlantic Provinces \$249; these averages compare with a national average of \$704.





Alberta.....	1961	54,532	103,233	17,342	573,277	935,462	343,822	802	2,669	36,913	167,980	357,345
	1962	27,667	110,597	18,025	625,958	1,015,327	372,006	840	2,939	41,503	179,559	380,302
	1963	58,433	114,947	19,686	679,254	1,084,332	389,769	783	2,975	42,277	188,550	409,278
	1964	29,225	123,694	21,007	743,949	1,193,780	433,187	782	3,000	43,517	200,062	454,935
British Columbia.....	1961	75,315	147,376	321,850	1,019,893	1,927,046	865,577	1,684	5,263	103,546	470,925	888,680
	1962	77,085	155,231	347,333	1,136,238	2,150,532	975,790	1,700	5,953	105,389	502,348	1,001,394
	1963	80,090	162,309	376,076	1,223,543	2,222,273	1,055,799	1,520	5,720	109,093	541,327	1,085,031
	1964	83,676	170,696	411,681	1,401,893	2,573,832	1,135,779	1,508	5,679	113,250	590,303	1,170,556
Yukon and Northwest Territories.....	1961	12	245	524	2,570	3,434	738	4	11	146	719	686
	1962	10	256	540	2,420	3,588	1,206	6	22	153	725	1,232
	1963	13	235	511	1,758	3,480	1,480	3	10	152	726	1,776
	1964	109	253	554	1,795	3,893	1,967	2	5	156	766	2,333
Canada.....	1961	939,413	1,968,163	3,532,943	11,409,12	21,798,798	23,438,556	10,434,832	16,989	1,352,603	5,701,651	10,931,561
	1962	974,376	2,071,376	3,824,514	12,447,13	22,974,877	25,790,087	11,429,644	17,228	1,389,516	6,096,174	11,986,666
	1963	1,003,566	2,137,927	4,095,916	14,387,15	26,337,534	28,014,888	12,272,734	16,030	1,425,440	6,493,289	12,875,073
	1964	1,057,592	2,265,188	4,513,633	15,108,16	26,928,476	30,556,099	13,535,991	60,098	1,491,257	7,086,939	14,247,184
<b>1964</b>												
<b>Newfoundland</b>												
Food and beverage industries.....	90	3,635	7,378	8,080	1,336	30,511	55,171	23,115	19	4,480	11,766	24,438
Leather industries.....	3	5	5	5	5	5	5	5	5	5	5	5
Textile industries.....	2	5	5	5	5	5	5	5	5	5	5	5
Knitting mills.....	1	5	5	5	5	5	5	5	5	5	5	5
Clothing industries.....	2	5	5	5	5	5	5	5	5	5	5	5
Wood industries.....	127	5	764	946	5	2,155	4,016	1,559	166	412	1,169	1,796
Furniture and fixture industries.....	7	5	5	5	5	5	5	5	5	5	5	5
Paper and allied industries <sup>a</sup> .....	2	2,497	5,728	14,860	5,957	30,200	75,475	39,115	—	3,015	19,192	39,513
Printing, publishing and allied industries.....	24	5	523	898	75	716	3,578	2,786	14	436	1,577	2,771
Primary metal industries.....	1	5	5	5	5	5	5	5	5	5	5	5
Metal fabricating industries (except machinery and transportation equipment industries).....	10	5	5	5	5	5	5	5	5	5	5	5
Machinery industries (except electrical machinery).....	1	5	5	5	5	5	5	5	5	5	5	5
Transportation equipment industries.....	3	57	121	150	6	129	350	216	—	64	187	216
Non-metallic mineral products industries.....	13	363	859	1,400	475	2,649	6,824	3,560	4	496	2,197	3,914
Petroleum and coal products industries.....	1	5	5	5	5	5	5	5	5	5	5	5
Chemical and chemical products industries.....	3	5	5	5	5	5	5	5	5	5	5	5
Miscellaneous manufacturing industries.....	8	5	5	5	5	5	5	5	5	5	5	5
Industry groups for which data cannot be published.....	...	765	1,663	2,477	284	11,986	20,357	8,635	13	1,032	3,777	10,121
<b>Prince Edward Island</b>												
Food and beverage industries.....	73	1,171	2,450	2,835	601	23,347	31,864	5,538	43	1,483	4,046	8,883
Leather industries.....	1	5	5	5	5	5	5	5	5	5	5	5
Textile industries.....	5	5	5	5	5	5	5	5	5	5	5	5

For footnotes, see end of table, p. 695.



New Brunswick												
Petroleum and coal products industries.	2	5	5	5	5	5	5	5	5	5	5	5
Chemical and chemical products industries.	15	122	257	453	117	3,309	6,287	2,879	2	77	289	3,370
Miscellaneous manufacturing industries.	40	180	379	532	771	782	2,014	1,151	19		237	1,403
Industry groups for which data cannot be published.	...	5,092	11,880	25,401	3,670	110,845	175,262	61,495	8	23	6,383	62,850
Quebec												
Food and beverage industries.	251	5,547	11,887	14,430	2,972	120,891	177,444	50,810	117	389	7,849	54,540
Leather industries.	4											
Textile industries.	10											
Knitting mills.	1											
Clothing industries.	5											
Wood industries.	227	2,907	6,655	7,966	1,000	20,977	40,956	20,558	161	377	3,496	21,536
Furniture and fixture industries.	20											
Paper and allied industries.	19	4,038	8,673	20,425	10,717	66,878	134,128	56,719	1		4,838	58,988
Printing, publishing and allied industries.	45	615	1,249	2,253	120	2,326	9,230	6,778	8	25	1,004	6,823
Primary metal industries.	3	41	84	113	10	105	317	200	—		49	207
Metal fabricating industries (except machinery and transportation equipment industries).	38	868	1,880	3,747	254	7,301	17,329	9,572	16	111	1,223	10,013
Machinery industries (except electrical machinery).	3											
Transportation equipment industries.	11											
Electrical products industries.	5	899	1,818	2,415	214	6,322	12,122	6,319	—		1,294	6,348
Non-metallic mineral products industries.	32	531	1,168	1,998	945	2,860	9,678	5,851	10	33	658	6,017
Petroleum and coal products industries.	1											
Chemical and chemical products industries.	11	162	357	694	507	5,436	9,287	3,576	1		267	3,862
Miscellaneous manufacturing industries.	38	398	844	1,312	74	2,593	5,625	3,228	18	97	538	3,327
Industry groups for which data cannot be published.	...	2,475	5,533	9,441	824	52,734	78,244	25,395	21		3,336	26,364
Food and beverage industries.	2,300	33,819	74,123	120,111	20,434	1,050,118	1,629,268	556,599	1,296	4,974	57,086	586,647
Tobacco products industries.	21	5,670	10,999	25,142	663	103,905	193,472	91,458	5		1,180	93,917
Rubber industries.	30											
Leather industries.	284	13,766	28,068	38,291	843	73,205	149,632	76,577	91	404	16,033	77,136
Textile industries.	428	35,212	78,378	118,738	10,202	392,309	702,401	311,756	119	704	45,022	317,201
Knitting mills.	220	10,599	23,132	29,249	1,062	92,170	155,998	65,911	38	178	12,176	65,967
Clothing industries.	1,562	52,734	105,662	140,979	2,070	357,688	644,321	291,810	638	2,874	61,557	293,180
Wood industries.	1,452	17,055	39,478	50,979	4,732	129,062	242,692	113,001	1,128	2,653	16,674	116,969
Furniture and fixture industries.	741	11,894	26,385	39,170	1,767	84,103	169,798	86,095	298	1,779	1,630	87,921
Paper and allied industries.	1,452	17,055	39,478	50,979	4,732	129,062	242,692	113,001	1,128	2,653	16,674	116,969
Printing, publishing and allied industries.	2,009	30,377	68,755	155,178	58,166	482,275	958,983	482,275	298	87	30,431	454,642
Primary metal industries.	1,002	12,970	25,111	58,045	1,742	92,937	272,882	178,615	529	2,533	20,640	181,107
Metal fabricating industries (except machinery and transportation equipment industries).	105	15,905	35,188	85,113	31,367	354,629	670,883	257,498	20	83	22,676	300,370
Machinery industries (except electrical machinery).	874	23,725	51,236	106,163	5,638	275,600	540,764	263,117	410	1,719	31,494	272,394
Industry groups for which data cannot be published.	109	7,041	15,711	31,210	1,322	91,487	184,690	91,758	7	5	12,860	104,061

For footnotes, see end of table, p. 695.





Manitoba		379	6,913	14,544	27,791	4,403	241,620	343,863	96,466	189	724	11,312	48,890	104,233
Food and beverage industries.....	16	664	1,373	3,091	4,806	49	4,806	8,236	3,668	7	26	742	2,257	3,661
Rubber industries.....	39	543	1,108	2,391	3,931	86	7,255	11,094	3,770	15	81	655	1,949	3,838
Textile industries.....	3	5,588	11,282	13,391	20,712	207	34,536	60,696	26,888	31	137	6,270	16,771	26,918
Knitting mills.....	129	968	2,188	2,932	2,866	6,191	12,767	6,397	112	224	1,187	3,947	7,685	11,023
Clothing industries.....	117	1,515	3,284	5,055	2,225	24,230	10,646	50,372	25,281	76	246	1,910	7,001	11,023
Furniture and fixture industries.....	25	2,279	4,772	9,955	1,372	33,598	44,178	30,289	—	102	395	1,778	8,074	25,501
Paper and allied industries.....	202	2,408	4,666	11,113	4,561	15,494	42,425	22,211	—	—	—	3,889	17,280	30,508
Printing, publishing and allied industries.....	14	2,926	6,168	12,518	647	30,591	59,584	27,669	—	52	185	3,948	14,080	22,644
Primary metal industries <sup>1</sup> .....	130	1,472	3,027	5,468	257	20,277	35,139	15,890	—	3	17	2,184	9,898	16,940
Metal fabricating industries (except machinery).....	28	1,582	3,464	6,258	445	13,558	29,208	15,668	—	30	28	2,434	10,741	16,030
Machinery industries (except electrical equipment).....	18	1,028	2,134	4,517	1,085	10,291	29,438	17,264	—	14	67	1,482	5,035	8,192
Transportation equipment industries.....	59	1,330	713	1,962	2,528	44,265	58,211	14,210	—	—	—	770	7,026	17,893
Electrical products industries.....	4	359	740	1,316	190	10,733	20,187	9,516	—	2	5	847	3,865	11,471
Non-metallic mineral products industries.....	103	757	1,621	2,686	111	4,125	10,265	6,033	—	64	272	1,027	4,113	6,631
Petroleum and coal products industries <sup>2</sup> .....	...	150	331	386	38	1,049	2,140	1,016	—	1	5	416	1,691	1,060
Chemical and chemical products industries.....	256	3,517	7,445	14,932	2,645	136,998	194,488	55,294	101	398	6,021	26,220	58,471	82,458
Food and beverage industries.....	8	224	467	625	16	1,904	3,655	1,601	—	—	—	289	1,165	1,844
Textile industries.....	6	898	1,862	2,931	392	6,210	13,184	6,410	103	163	1,165	4,084	7,237	10,332
Clothing industries.....	37	76	156	244	14	559	1,122	6,601	30	93	195	834	1,612	2,405
Furniture and fixture industries.....	6	158	344	638	177	2,102	3,669	1,636	1	5	298	1,432	6,340	11,467
Paper and allied industries.....	124	873	1,785	3,910	198	4,009	15,489	11,276	—	—	—	4,512	8,772	13,900
Printing, publishing and allied industries.....	4	745	1,531	2,923	162	9,606	17,613	7,949	31	128	1,038	4,512	8,772	13,900
Primary metal industries.....	60	202	434	830	52	2,207	4,752	2,706	2	5	442	2,354	2,781	4,205
Metal fabricating industries (except machinery).....	19	584	1,276	2,329	1,103	7,132	18,327	9,513	—	—	—	781	3,280	10,032
Machinery industries (except electrical equipment).....	6	582	1,219	3,450	886	60,365	77,292	15,955	—	14	53	787	4,970	13,900
Transportation equipment industries.....	41	76	180	293	125	2,610	3,595	1,560	—	—	—	171	804	2,405
Electrical products industries.....	48	217	449	682	37	1,299	3,129	1,813	—	29	179	290	1,037	2,033
Non-metallic mineral products industries.....	...	927	2,073	4,456	2,837	9,855	24,087	12,034	3	5	1,453	8,042	12,524	18,804
Petroleum and coal products industries.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chemical and chemical products industries.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Miscellaneous manufacturing industries.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Industry groups for which data cannot be published.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...

## Saskatchewan

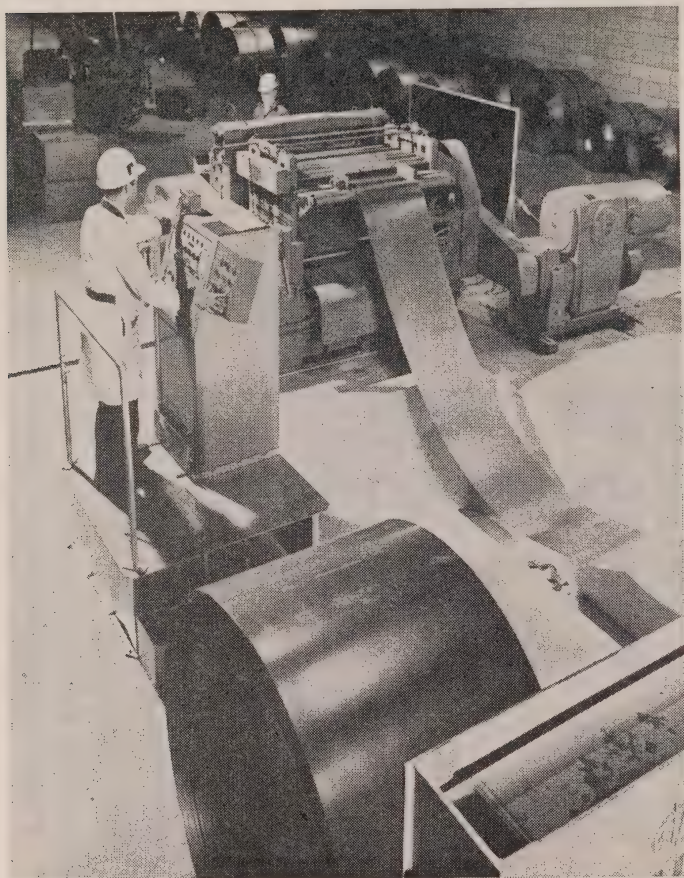
For footnotes, see end of table, p. 695.





	511	1,669	3,239	4,893	87	9,205	18,194	9,303	12	37	1,926	6,270	9,268
Clothing industries.....	1,031	34,231	69,441	163,915	14,780	456,028	781,349	324,630	452	1,371	39,426	197,776	327,640
Furniture and fixture industries.....	231	1,657	3,312	6,467	238	13,647	27,532	13,935	161	504	2,038	8,822	14,375
Paper and allied industries.....	46	9,677	20,184	58,097	21,537	185,906	440,786	237,440	4	5	13,121	84,181	239,229
Printing, publishing and allied industries.....	306	2,526	5,038	13,842	498	16,640	62,464	45,557	112	484	4,852	25,550	45,911
Primary metal industries <sup>1</sup> .....	39	5,494	11,641	31,626	5,106	87,298	167,918	76,743	7	34	7,352	44,777	77,645
Metal fabricating industries (except machinery and transportation equipment industries).....	364	5,171	10,321	25,518	1,402	63,392	128,819	64,418	111	441	7,098	37,144	67,383
Machinery industries (except electrical machinery).....	57	1,794	3,672	9,472	403	22,601	46,052	23,795	5	5	2,990	16,983	25,013
Transportation equipment industries.....	132	3,745	7,636	20,303	557	37,736	76,769	38,664	60	178	5,063	28,020	40,797
Electrical products industries.....	35	843	1,751	3,656	226	14,144	28,656	15,074	3	5	1,638	8,481	17,245
Non-metallic mineral products industries.....	131	1,775	3,699	8,738	3,074	20,097	48,298	25,152	44	142	2,423	12,799	26,599
Petroleum and coal products industries <sup>2</sup> .....	8	665	1,425	4,199	1,453	102,248	127,529	24,577	—	—	1,184	8,019	25,473
Chemical and chemical products industries.....	110	1,686	3,577	8,281	3,937	41,788	89,513	45,776	9	35	3,051	15,804	48,801
Miscellaneous manufacturing industries.....	296	1,378	2,813	5,504	287	7,143	19,911	12,643	187	921	1,958	8,935	17,967
Industry groups for which data cannot be published.....	...	362	726	1,122	91	3,118	6,542	3,282	3	5	503	2,076	3,309
<b>Yukon and Northwest Territories</b>													
Food and beverage industries.....	4	7	15	20	12	90	223	121	—	—	19	69	156
Wood industries.....	5	35	72	121	25	181	650	458	1	5	51	179	461
Printing, publishing and allied industries.....	3	5	5	5	5	5	5	5	5	5	5	5	5
Petroleum and coal products industries.....	1	5	5	5	5	5	5	5	5	5	5	5	5
Industry groups for which data cannot be published.....	...	67	166	414	20	1,523	3,019	1,388	1	5	86	517	1,715

<sup>1</sup> Conceptually identical to previous years.<sup>2</sup> Cannot be reported separately for manufacturing and non-manufacturing activities but related substantially to manufacturing activity.<sup>3</sup> Includes production and cost of materials, supplies, fuels used and purchases of products and materials for re-sale in the same condition; all shipments and other operational revenue less total cost of materials, supplies, fuels used and purchases of products and materials for re-sale in the same condition; all adjusted for inventory changes where required.<sup>4</sup> Confidential.<sup>5</sup> Pulp and paper mills only; publication of these figures was authorized by the firms concerned.<sup>6</sup> Petroleum refineries only; data for two establishments included in "Industry groups for which data cannot be published".<sup>7</sup> Incorporates revised basis of valuation for smelting and refining.<sup>8</sup> Petroleum refineries only; data for three establishments included in "Industry groups for which data cannot be published".



Coil steel passing through an automatic shearing machine. A single button on the electronic programming panel activates the complete shearing cycle, producing the required number and size of sheets.

### Distribution by Metropolitan Area

The 16 census metropolitan areas\* for which manufacturing statistics are given in Table 10 accounted in 1964 for manufacturing value added of \$8,019,000,000 and shipments of goods of own manufacture of \$18,125,000,000; the former was 59.2 p.c. and the latter 58.7 p.c. of the respective totals for all Canadian manufacturing industries. The proportions of total employees and of salaries and wages accounted for by these metropolitan areas were slightly lower. They had 855,716 employees, including those in non-manufacturing activity which was 57.4 p.c. of the total for Canada, and they paid total salaries and wages of \$4,073,000,000 to these employees, or 57.5 p.c. of the total.

Approximately half (51.1 p.c.) of all value added by manufacture in Canada was accounted for by the seven largest metropolitan areas, as ranked by the value of their shipments of goods of own manufacture. In descending order these were: Toronto, Montreal, Hamilton, Vancouver, Windsor, Winnipeg and Kitchener. These areas accounted for 50.4 p.c. of the shipments of goods of own manufacture, 49.7 p.c. of total employees and 50.1 p.c. of total salaries and wages of Canada's manufacturing industries.

\* As defined for the 1961 Census of Population; see DBS publication *1961 Census of Canada—Population: Incorporated Cities, Towns and Villages* (Catalogue No. 92-535). These areas are in some cases substantially larger than metropolitan areas defined for other purposes.

10.—Summary Statistics of Manufactures, by Census Metropolitan Area, 1961-64

Census Metropolitan Area and Year	Estab-lish-ments	MANUFACTURING ACTIVITY <sup>1</sup>						TOTAL ACTIVITY				
		Production and Related Workers			Cost of Fuel and Elec-tricity <sup>2</sup>	Cost of Materials and Supplies Used	Value of Ship-ments of Goods of Own Manu-facture	Value Added	Working Owners and Partners		Total Employees <sup>3</sup>	
		Number	Man-Hours Paid	Wages					With-drawals	Number	Salaries and Wages	
	No.	'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	
<b>Calgary, Alta.</b>												
1961	395	7,476	15,309	30,676	3,797	174,947	274,974	162	605	11,195	48,909	100,968
1962	414	7,619	15,901	32,722	3,944	190,178	299,139	165	626	11,441	51,365	111,118
1963	419	7,664	15,844	33,325	4,086	204,433	315,211	166	620	11,616	52,977	115,710
1964	439	7,232	15,199	32,719	4,232	218,714	337,460	160	674	11,103	52,977	121,725
<b>Edmonton, Alta.</b>												
1961	484	11,805	24,555	47,592	7,273	267,003	433,395	181	724	17,076	74,053	166,487
1962	514	12,455	26,090	51,376	7,770	296,421	490,084	201	777	17,878	79,857	184,310
1963	517	12,267	25,722	51,956	8,342	305,101	490,392	180	787	17,778	81,864	188,535
1964	533	12,933	27,470	56,451	9,235	320,304	525,969	177	786	18,541	88,326	208,730
<b>Halifax, N.S.</b>												
1961	140	5,395	12,045	19,609	1,813	83,285	145,955	53	189	7,655	29,534	61,496
1962	143	5,727	12,845	20,688	1,868	90,212	153,303	55	199	8,045	31,218	63,228
1963	139	5,319	11,467	19,866	1,888	95,888	161,516	53	216	7,594	30,496	65,567
1964	145	5,628	12,189	22,612	2,124	110,321	194,380	55	224	8,149	34,581	74,854
<b>Hamilton, Ont.</b>												
1961	687	41,121	86,996	188,250	26,617	564,409	1,168,105	299	1,242	56,483	273,247	584,735
1962	714	41,087	93,211	208,038	28,591	630,553	1,279,597	339	1,306	59,376	301,515	649,584
1963	685	45,948	96,876	220,811	31,396	679,026	1,391,844	310	1,237	61,954	319,244	707,163
1964	704	49,771	106,065	254,210	35,362	790,024	1,601,648	304	1,263	65,803	357,162	798,217
<b>Kitchener, Ont.</b>												
1961	460	22,972	49,008	82,400	5,480	238,502	467,900	220	655	30,666	123,119	224,537
1962	472	25,383	53,394	93,268	6,077	279,308	518,840	169	671	32,987	134,404	244,393
1963	467	27,274	57,825	103,678	6,318	305,863	571,441	148	587	35,021	146,837	272,274
1964	487	28,541	60,896	113,578	6,937	337,770	628,094	155	637	36,828	160,995	298,169
<b>London, Ont.</b>												
1961	310	12,406	25,658	45,939	3,747	140,728	297,291	141	490	18,524	77,186	170,869
1962	320	13,402	27,701	51,359	3,976	162,941	339,747	155	578	19,719	84,788	196,377
1963	317	13,542	28,169	54,268	4,231	187,199	375,913	143	579	19,787	88,801	203,106
1964	323	14,157	28,934	60,433	4,487	208,814	426,566	146	585	20,670	96,551	231,109
<b>Montreal, Que.</b>												
1961	5,088	173,468	361,682	601,185	43,640	2,166,674	3,997,515	2,415	10,292	245,245	978,343	1,870,693
1962	5,136	177,394	378,802	646,316	46,353	2,358,617	4,339,520	2,331	10,137	248,034	1,031,061	2,032,935
1963	5,182	175,600	373,903	655,435	47,389	2,510,960	4,559,161	2,190	10,017	245,327	1,051,508	2,081,757
1964	5,398	182,946	390,524	709,157	49,833	2,673,398	4,866,656	2,185	10,104	253,919	1,129,201	2,268,677
<b>Ottawa, Ont.</b>												
1961	330	11,517	24,441	45,987	10,620	127,609	277,961	163	576	17,259	74,687	154,037
1962	337	11,997	25,579	49,826	10,946	134,724	303,478	170	648	17,571	79,305	165,383
1963	328	11,848	25,200	50,552	11,113	138,766	307,231	167	668	17,522	82,456	161,865
1964	337	12,327	26,508	56,214	12,663	150,815	333,581	172	691	18,238	89,006	175,952

For footnotes, see end of table, p. 698.



10.—Summary Statistics of Manufactures, by Census Metropolitan Area, 1961-64—concluded

Census Metropolitan Area and Year	Estab-lish-ments	MANUFACTURING ACTIVITY <sup>1</sup>					TOTAL ACTIVITY			
		Production and Related Workers		Cost of Fuel and Elec-tricity <sup>2</sup>	Cost of Materials and Supplies Used	Value of Ship-ments of Goods and of Own Manu-facture	Working Owners and Partners		Total Employees <sup>3</sup>	Total Value Added <sup>4</sup>
		Number	Man-Hours Paid				Number	With-drawals		
	No.		'000	\$'000	\$'000	\$'000			Number	\$'000
<b>Quebec, Que.</b>										
1961	605	17,234	36,450	55,576	8,408	148,992	369	1,372	23,425	82,462
1962	573	17,324	37,023	59,621	8,705	165,427	334	1,296	23,344	87,804
1963	562	17,664	37,882	64,112	8,968	184,812	285	1,139	23,608	93,070
1964	561	17,283	36,908	64,672	9,075	191,800	275	1,139	23,116	94,555
<b>Saint John, N.B.</b>										
1961	109	15,185	10,868	17,361	3,439	111,394	41	109	6,784	24,252
1962	109	5,258	11,399	19,453	3,640	108,519	41	120	6,900	26,699
1963	104	5,406	11,976	21,401	3,898	143,417	36	112	7,031	29,267
1964	102	4,855	10,723	20,344	3,879	139,899	33	108	6,505	28,689
<b>St. John's, Nfld.</b>										
1961	78	1,767	3,724	4,806	619	13,614	30	97	2,435	7,505
1962	80	1,709	3,800	4,968	633	13,650	31	92	2,336	7,509
1963	78	1,689	3,645	5,070	663	15,838	28	100	2,330	7,968
1964	76	1,656	3,515	5,188	679	16,218	28	98	2,311	8,179
<b>Toronto, Ont.</b>										
1961	5,011	156,618	330,022	608,645	47,438	2,230,820	2,284	9,613	235,387	1,027,604
1962	5,113	163,871	347,087	662,645	49,899	2,513,046	2,225	9,589	242,266	1,044,038
1963	5,139	172,227	365,937	725,972	52,487	2,803,126	2,123	9,623	251,791	1,189,386
1964	5,352	181,338	386,898	799,044	56,713	3,124,272	2,108	9,947	263,335	1,296,452
<b>Vancouver, B.C.</b>										
1961	1,744	37,173	73,372	157,633	15,249	555,748	673	2,528	51,348	230,751
1962	1,795	38,287	76,821	169,107	16,557	614,721	659	2,597	52,812	246,978
1963	1,783	39,700	80,461	183,906	17,389	665,320	627	2,633	51,346	265,718
1964	1,838	41,902	84,789	200,371	18,534	744,439	619	2,624	57,375	291,047
<b>Victoria, B.C.</b>										
1961	213	4,262	8,103	18,510	1,770	37,078	142	507	5,710	25,294
1962	221	4,627	9,514	22,536	1,168	47,313	148	566	6,175	29,788
1963	215	4,614	9,434	22,639	1,114	59,412	134	503	6,161	30,331
1964	222	4,395	8,809	22,078	1,158	61,829	133	547	5,925	30,155
<b>Windsor, Ont.</b>										
1961	382	15,851	33,069	74,472	6,110	239,720	176	506	22,283	115,033
1962	391	15,968	34,165	78,359	6,418	275,263	182	712	22,051	118,388
1963	386	17,694	38,696	93,871	6,928	301,028	167	609	24,352	137,853
1964	395	21,039	46,373	119,357	7,523	347,918	168	708	28,121	168,956
<b>Winnipeg, Man.</b>										
1961	985	23,966	49,187	81,427	7,984	364,941	438	1,692	33,891	128,783
1962	1,008	24,104	49,984	84,624	8,328	379,956	416	1,554	33,800	132,551
1963	1,066	24,905	51,864	89,461	8,487	400,284	402	1,598	34,579	138,410
1964	1,028	25,933	54,313	95,750	8,776	440,287	393	1,554	35,787	146,406

<sup>1</sup> Conceptually identical to previous years.<sup>2</sup> Cannot be reported separately for manufacturing and non-manufacturing activities but related substantially to manufacturing activity.<sup>3</sup> Included with administrative and office employees in the manufacturing series published in previous years.<sup>4</sup> Value of total shipments and other operational revenue less total cost of materials, supplies, fuels used and purchases of products and materials for re-sale in the same condition; all adjusted for inventory.

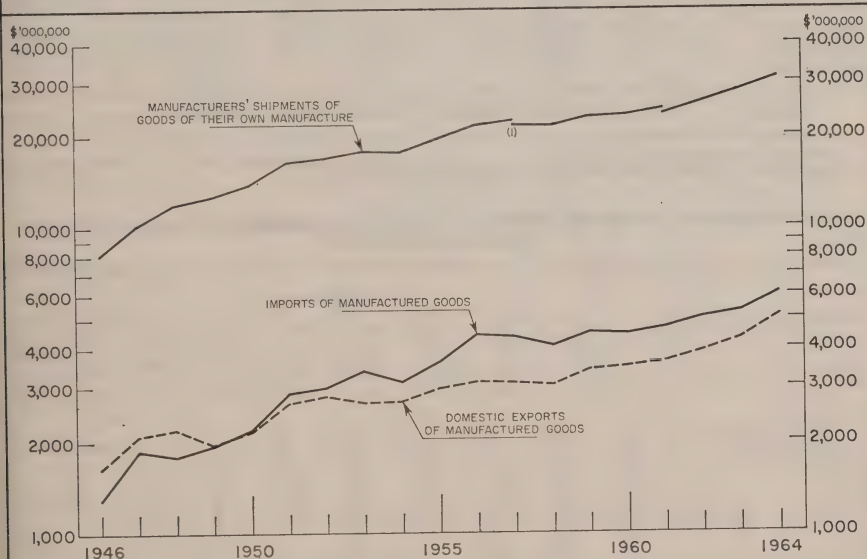
### Subsection 3.—Size of Manufacturing Establishments Based on Employment and Shipments

#### Size Based on Employment

About one half, or 50.6 p.c. of all persons employed in Canada's manufacturing industries in 1964 worked in establishments employing 200 or more persons; about one fifth, or 18.5 p.c., worked in establishments employing 1,000 or more. There were 127 establishments employing 1,000 or more, all but 18 of them in Ontario and Quebec; of these 18, 12 were in Western Canada and six were in the Atlantic Provinces.

The cyclical upswing in business activity which began in 1961 and continued through 1964 tended to increase business volume for manufacturing generally and was especially favourable to certain industries characterized by large plants; this cyclical stimulus combined with long-term growth of the manufacturing industries to shift these employment breakdowns in an upward direction. Thus, establishments employing 1,500 or more increased their employment by almost 14 p.c. between 1961 and 1964, as against a decrease of 12 p.c. in the employment of establishments employing fewer than 200; these comparisons refer, of course, to statistical size-classes as such, not identical groups of plants in the two years.

SHIPMENTS, EXPORTS AND IMPORTS OF  
MANUFACTURED GOODS, 1946-64



(1) REVISED (1960) STANDARD INDUSTRIAL CLASSIFICATION AND NEW ESTABLISHMENT CONCEPT, 1957-64

### 11.—Establishments and Employment in the Manufacturing Industries, by Number Employed per Establishment, 1949, 1955, 1963 and 1964

Size Group <sup>1</sup>	Estab- lishments	Em- ployees	Working Owners and Partners	Pro- portion of Total Em- ployment <sup>1</sup>	Estab- lishments	Em- ployees	Working Owners and Partners	Pro- portion of Total Em- ployment <sup>1</sup>
	1949				1955 <sup>2</sup>			
	No.	No.		p.c.	No.	No.		p.c.
Under 5 employed.....	16,647	34,865		3.0	17,602	36,340		2.8
5 to 14 ".....	9,133	75,482		6.4	9,864	81,471		6.3
15 to 49 ".....	5,967	159,012		13.6	6,340	169,575		13.1
50 to 99 ".....	1,905	132,069		11.3	2,082	144,411		11.1
100 to 199 ".....	1,114	156,084		13.3	1,175	163,091		12.6
200 to 499 ".....	694	213,130		18.2	739	227,667		17.5
500 to 999 ".....					243	167,720		12.9
1,000 to 1,499 ".....	332	391,455		33.4	76	91,840		7.1
1,500 or over.....					61	200,413		15.4
Head offices.....	—	9,110		0.8	—	15,933		1.2
<b>Totals.....</b>	<b>35,792</b>	<b>1,171,207</b>		<b>100.0</b>	<b>33,182</b>	<b>1,298,461</b>		<b>100.0</b>
	1963				1964			
	No.	No.	No.	p.c.	No.	No.	No.	p.c.
Under 5 employed.....	12,352	16,846	10,675	2.0	12,075	16,614	10,618	1.8
5 to 14 ".....	9,134	71,207	5,150	5.6	9,133	72,445	4,259	5.1
15 to 49 ".....	6,829	184,550	1,055	13.6	7,012	191,063	793	12.7
50 to 99 ".....	2,445	169,319	88	12.4	2,527	175,552	61	11.7
100 to 199 ".....	1,377	190,540	17	13.9	1,515	211,016	12	14.0
200 to 499 ".....	869	261,628	4	19.1	966	293,256	4	19.4
500 to 999 ".....	243	169,392	—	12.3	275	191,468	—	12.7
1,000 to 1,499 ".....	55	68,743	—	5.0	65	78,283	—	5.2
1,500 or over.....	53	165,577	—	12.1	62	200,347	—	13.3
Head offices <sup>3</sup> .....	—	54,733	—	4.0	—	61,213	—	4.1
<b>Totals.....</b>	<b>33,357</b>	<b>1,352,535</b>	<b>16,939</b>	<b>100.0</b>	<b>33,630</b>	<b>1,491,257</b>	<b>15,747</b>	<b>100.0</b>

<sup>1</sup> Includes working owners and partners. <sup>2</sup> Newfoundland included from 1955. <sup>3</sup> Not comparable with years prior to 1961 when coverage of head offices was incomplete.

### 12.—Establishments in the Manufacturing Industries classified by Number Employed and by Province, 1964

Province or Territory	Number Employed <sup>1</sup>									Total
	Under 5	5 to 14	15 to 49	50 to 99	100 to 199	200 to 499	500 to 999	1,000 to 1,499	1,500 or Over	
	No.	No.	No.	No.	No.	No.	No.	No.	No.	
Newfoundland.....	157	50	47	21	18	4	—	1	1	299
Prince Edward Island....	78	38	24	3	3	2	—	—	—	148
Nova Scotia.....	409	266	199	56	21	22	6	1	1	981
New Brunswick.....	298	190	144	40	29	16	5	2	—	724
Quebec.....	4,032	2,957	2,341	860	473	303	92	21	18	11,097
Ontario.....	4,026	3,419	2,828	1,097	716	490	135	31	39	12,781
Manitoba.....	578	387	281	133	54	31	5	2	—	1,471
Saskatchewan.....	328	258	131	26	21	8	1	—	—	773
Alberta.....	670	566	330	91	58	22	8	1	—	1,746
British Columbia.....	1,495	997	684	199	122	68	23	6	3	3,597
Yukon and Northwest Territories.....	4	5	3	1	—	—	—	—	—	13
<b>Canada.....</b>	<b>12,075</b>	<b>9,133</b>	<b>7,012</b>	<b>2,527</b>	<b>1,515</b>	<b>966</b>	<b>275</b>	<b>65</b>	<b>62</b>	<b>33,630</b>

<sup>1</sup> Includes working owners and partners.



## Size Based on Shipments

Although the average value of shipments of manufacturing establishments throughout Canada in 1964 was somewhat less than \$1,000,000, those with shipments of more than \$1,000,000 accounted for 84.7 p.c. of all shipments of goods of own manufacture. There were 4,556 manufacturing establishments with shipments valued at more than \$1,000,000 and, of these, 3,515 or 77.2 p.c. were in Ontario and Quebec, 420 or 9.2 p.c. were in the Prairie Provinces, 415 or 9.1 p.c. were in British Columbia, and 206 or 4.5 p.c. were in the Atlantic Provinces.

### 13.—Establishments and Shipments in the Manufacturing Industries, by Shipments per Establishment, 1963 and 1964

Value Group	Estab- lish- ments	Value of Ship- ments of Goods of Own Manu- facture	Average per Estab- lish- ment	Pro- portion of Total Ship- ments	Estab- lish- ments	Value of Ship- ments of Goods of Own Manu- facture	Average per Estab- lish- ment	Pro- portion of Total Ship- ments
	1963				1964			
	No.	\$'000	\$'000	p.c.	No.	\$'000	\$'000	p.c.
Under \$25,000.....	8,052	96,975	12	0.3	7,783	94,475	12	0.3
\$25,000 but under \$50,000.....	4,444	160,991	36	0.6	4,566	164,585	36	0.5
50,000 " " 100,000.....	4,569	327,615	72	1.2	4,592	328,343	72	1.1
100,000 " " 200,000.....	4,319	617,879	143	2.2	4,370	626,571	143	2.0
200,000 " " 500,000.....	4,889	1,554,801	313	5.5	5,071	1,622,205	320	5.3
500,000 " " 1,000,000.....	2,639	1,850,575	701	6.6	2,692	1,893,953	704	6.1
1,000,000 " " 5,000,000.....	3,224	6,854,637	2,126	24.5	3,464	7,393,252	2,134	24.0
5,000,000 or over.....	983	16,551,415	16,838	59.1	1,092	18,732,715	17,155	60.7
<b>Totals and Averages.....</b>	<b>33,119</b>	<b>28,014,888</b>	<b>846</b>	<b>100.0</b>	<b>33,630</b>	<b>30,856,099</b>	<b>918</b>	<b>100.0</b>

### 14.—Establishments in the Manufacturing Industries classified by Value of Shipments of Goods of Own Manufacture and by Province, 1964

Province or Territory	Up to \$24,999	\$25,000 to \$99,999	\$100,000 to \$499,999	\$500,000 to \$999,999	\$1,000,000 to \$4,999,999	\$5,000,000 or Over	Total
	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	140	48	62	16	41	14	299
Prince Edward Island.....	54	42	36	8			148
Nova Scotia.....	339	271	234	44	79	15	981
New Brunswick.....	230	202	154	66	57	15	724
Quebec.....	2,531	3,072	3,273	911	992	318	11,097
Ontario.....	2,473	3,252	3,723	1,128	1,661	544	12,781
Manitoba.....	395	386	388	126	148	28	1,471
Saskatchewan.....	232	246	187	45	48	15	773
Alberta.....	415	578	467	105	129	52	1,746
British Columbia, Yukon and North- west Territories.....	974	1,061	917	243	313	102	3,610
<b>Canada.....</b>	<b>7,783</b>	<b>9,158</b>	<b>9,441</b>	<b>2,692</b>	<b>3,464</b>	<b>1,092</b>	<b>33,630</b>

## Section 5.—Federal Assistance to Manufacturing

The federal Department of Industry was established in July 1963, to promote the growth, efficiency and improvement of manufacturing industries in Canada. The Department assists Canadian industries to adapt to technological changes and variations in domestic and export market; it aids potentially sound industries to overcome problems of growth and development and promotes industrial research, development and design activity.

**Automotive Program.**—The Canada-United States Agreement on Automotive Products, signed by Prime Minister Pearson and President Johnson on Jan. 16, 1965, provides for the removal of tariffs and other impediments to trade between the two countries in motor vehicles and original equipment parts. The basic objective of the plan is to provide access to expanded markets for Canadian motor vehicle and component producers. By increased production and specialization, they will be in a position to expand trade and employment and to improve the productivity and efficiency of the industry. In order to enable Canadian vehicle and parts producers to achieve these objectives, a number of important features were incorporated into the program. The most important of these was the undertaking of Canadian motor vehicle manufacturers to expand very considerably Canadian production by the end of the 1968 calendar year.

As a result of the new program, Canada is producing an increasingly larger share of the total North American output of vehicles and components. Canadian exports of vehicles and parts and employment in this industry have increased substantially since the implementation of the program and new investment in additional plants and expansions to existing facilities have been extensive.

**Adjustment Assistance (for Firms in the Automotive Parts Industries).**—The Automotive Program offers increased opportunities to Canadian automotive parts manufacturers for expanded production, rationalization of output and reduced costs. In order to take advantage of these opportunities, Canadian parts makers must engage in substantial re-equipment and plant expansion programs. The Adjustment Assistance Program has been established to make term loans available to automotive parts manufacturers for the financing of the acquisition, construction, installation and modernization of facilities or machinery and for use as working capital.

A program of tariff remissions on imported machinery and equipment was also introduced in order to further assist the automotive parts producers to expand and modernize productive facilities. The tariff remissions cover machinery and equipment used in the production of original equipment automotive parts, accessories and tooling when such machinery and equipment are not available from Canadian manufacturers in time to meet production schedules.

**Industrial Design.**—Industrial design is becoming increasingly important to the successful development and marketing of manufactured products and to assist Canadian manufacturers in adopting sound design practices, the Department of Industry has initiated a comprehensive design program. The four main areas of design activity under the program are: design promotion in industry; research and product development; design education; and design information.

The National Design Council advises the Minister of Industry on programs to promote and assist the improvement of design in Canadian manufactured products. The Council's administrative arm, the National Design Branch, develops and implements approved design programs to stimulate design education and the application of good design techniques in industry.

Projects were sponsored in 1966 in co-operation with industry associations to encourage the creative use of wood, structural steel and concrete, as well as to recognize good design in the products of Canadian appliance manufacturers. A major program, Canada-Design '67 initiated in March 1965, recognized well-designed Canadian products required to construct, furnish and equip Centennial and Expo 67 projects. Promotion of these products was conducted through displays, press publicity, specification tearsheets and through two Design '67 Catalogues which have been distributed to principal buyers in Canada and abroad.

Continuing activities by the Council include the operation of the Design Centre in Toronto, which is a focal point for product and design promotion; the Design Index, a

reference system containing information about well-designed products and the Canadian Register of Designers which provides data to industry on designers and design services. A Design Centre will be established in 1967 in Montreal.

**Area Development Program.**—The area development program fosters economic development in designated areas characterized by high chronic unemployment, slow employment growth and serious problems of underemployment as measured by low non-farm family income. Several financial incentives designed to assist new and expanding manufacturing and processing industries in the designated areas are available including a three-year income tax abatement on capital grants for new machinery and buildings, as well as special depreciation rates on new machinery, equipment and buildings. The three-year tax abatement measure expires Mar. 31, 1967.

The program embraces large regions of the country, in all ten provinces, with 65 Canada Manpower Centre areas and 16 counties and census divisions being designated. The program covers areas comprising approximately 16 p.c. of the labour force. Since the inception of the program in December 1963, more than 600 firms have indicated their intention to establish new or expanded facilities in designated areas and to invest more than \$1,250,000,000. More than 41,000 new jobs were to be provided directly by these factories as well as a similar number of additional jobs associated with supply and service industries.

**Program for the Advancement of Industrial Technology.**—In 1965 the Department of Industry initiated a Program for the Advancement of Industrial Technology (PAIT) to stimulate industrial growth by the application of science and technology to the development of new or improved products and processes. The basic aim of the program is to help industry upgrade its technology and expand its innovation activity by underwriting specific development projects that involve a significant advance in technology and which, if successful, offer good prospects for commercial exploitation. PAIT is essentially a form of "development insurance" with the Government sharing the financial risk of the development with the sponsoring company.

PAIT assistance is available to individual Canadian companies or groups of Canadian companies for developmental projects to be carried out and exploited in Canada. Companies are expected to have the capabilities and facilities to undertake the development work and also to provide for the manufacture and sale of the resulting products in both domestic and export markets. This program is designed to increase the technical competitiveness of Canadian industry and is also intended to help create an industrial environment attractive to Canada's best-qualified scientific, technical and managerial personnel.

Sixty-six Government-assisted development projects, representing a total effort of approximately \$25,500,000, have been undertaken by Canadian firms since the inception of the PAIT program.

**Defence Product-Development Assistance.**—In the year since November 1965, new commitments totalling approximately \$17,000,000 were made under the Defence Development Assistance Program to foster the growth of a development capability in Canadian industry in support of the Production-Sharing Program. The projects supported under the program to meet present or anticipated requirements of military services of the United States and other allied governments included: Helicopter Logistic Devices at Okanagan Helicopters (Vancouver); Air Transportable Maintenance Shop at ATCO (Calgary); Black Brant Family of Rockets at Bristol Aerospace (Winnipeg); Tilt Wing Aircraft at Canadair (Montreal); High Frequency Sounding Equipment at EMI Cossor (Halifax); Xenon Light Sources at Atlantic Films (St. John's, Newfoundland); the Twin Otter Aircraft Turbinization Project at de Havilland (Toronto); the OT-4 Stationary Gas Turbine Engine at Orenda (Toronto) and Parachute Developments at Irvin Airchute (Fort Erie). For the year ended Mar. 31, 1967, the Government approved a cash authorization of \$25,000,000 for this program.



**Shipbuilding Construction Assistance.**—During 1966, the Federal Government continued its program of encouraging a self-sustaining and efficient shipbuilding industry. The program included examination of financial measures in support of shipbuilding and the application of general assistance plans administered by the Department of Industry.

The industry responded effectively during the year to the policy of national competition for government shipbuilding requirements. Similarly, the industry made active use of the subsidy program for commercial vessels which provides a subsidy rate of 25 p.c. for vessels, other than fishing trawlers, for the period 1966-69, after which time it will be reduced by 2 p.c. each year until a rate of 17 p.c. is reached in 1972. The current subsidy rate of 50 p.c. for fishing trawlers is being continued.

**Industrial Missions.**—Industrial missions concerning wood components, structural ceramics and prefabricated and pre-cast concrete were recently organized to visit industrial establishments in the United States and Europe. The purpose of these missions is to enable Canadian business men to examine and assess the latest technological developments taking place outside Canada in their particular industries. The information gained is prepared in report form and circulated to Canadian industry.

---

# CHAPTER XVII.—CAPITAL EXPENDITURES, CONSTRUCTION AND HOUSING\*

## CONSPECTUS

	PAGE		PAGE
SECTION 1. CAPITAL EXPENDITURES ON CONSTRUCTION AND ON MACHINERY AND EQUIPMENT.....	705	SECTION 3. HOUSING.....	720
SECTION 2. CONSTRUCTION STATISTICS.....	712	Subsection 1. Government Aid to House-Building.....	720
Subsection 1. Value of Construction Work Performed.....	712	Subsection 2. Housing Activities in 1965-66.....	724
Subsection 2. Contracts Awarded and Building Permits Issued.....	717	Subsection 3. Housing Statistics of the 1961 Census.....	728

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

This Chapter provides data on the capital expenditures made by all sectors of the Canadian economy on construction and on machinery and equipment, together with summaries of other available statistics for the construction industry. Section 1 shows the amounts spent by each of the various industrial or economic sectors. Section 2 brings together a number of summaries of related series on construction activity—value of work performed by type of structure, value of materials used, salaries and wages paid and numbers employed, contracts awarded and building permits issued. Government aid to house-building, construction of dwelling units and housing statistics of the 1961 Census are covered in Section 3.

## Section 1.—Capital Expenditures on Construction and on Machinery and Equipment

Capital expenditures† in all sectors of the economy amounted to \$12,798,000,000 in 1965, an increase of 16.9 p.c. over the 1964 total of \$10,944,000,000. The over-all increase resulted from a 16.7-p.c. rise in the purchase of machinery and equipment and a 17.1-p.c. increase in construction expenditures. After 1946, capital outlays in Canada increased each year to a peak in 1957. A four-year decline followed but a significant increase shown in 1962 was strengthened in the next three years. Capital spending in current dollars exceeded the 1957 peak in these years but, in constant dollars, the 1957 level was not exceeded until 1964; in that year the capital program was recorded at 8.7 p.c. above 1957 and in 1965 it was 21.0 p.c. higher. These expenditures on the expansion, modernization or renewal of the nation's production facilities are a significant indicator of the economic activity in the country; in 1965 they represented over 24 p.c. of the gross national product.

\* Except where otherwise noted, prepared in the Business Finance Division, Dominion Bureau of Statistics.

† Capital expenditure figures for 1964 and earlier years are final and those for 1965 are preliminary and subject to revision at a later date. Capital expenditures for 1964 and 1965, as well as intentions for 1966, appear in greater detail in the publication *Private and Public Investment in Canada, Outlook 1966*, available from the Queen's Printer (Catalogue No. 61-205).

As shown in Table 1, construction accounts for about two thirds of the total capital expenditures each year and machinery and equipment for about one third. Recently, there has been a slightly upward trend in the proportion of the total represented by the purchase of machinery and equipment, which rose from 32.5 p.c. in 1961 to 35.9 p.c. in 1965. The proportion for housing construction moved upward from 17.9 p.c. in 1961 to 18.5 p.c. in 1964 but dropped to 16.7 p.c. in 1965. Non-residential construction outlays dropped from 49.6 p.c. of the total in 1961 to 47.4 p.c. in 1965.

**1.—Capital Expenditures on Construction and on Machinery and Equipment, in Current and Constant (1957) Dollars, 1955-65**

NOTE.—Actual expenditures 1955-64; preliminary actual 1965.

Year	Capital Expenditures						Total Expenditure as Percentage of Gross National Product	
	Construction		Machinery and Equipment		Totals		Current Dollars	Constant 1957 Dollars
	Current Dollars	Constant 1957 Dollars	Current Dollars	Constant 1957 Dollars	Current Dollars	Constant 1957 Dollars		
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	p.c.	p.c.
1955.....	4,169	4,512	2,075	2,305	6,244	6,817	23.0	23.5
1956.....	5,273	5,445	2,761	2,888	8,034	8,333	26.3	26.4
1957.....	5,784	5,784	2,933	2,933	8,717	8,717	27.3	27.3
1958.....	5,830	5,865	2,534	2,467	8,364	8,332	25.4	25.9
1959.....	5,709	5,557	2,708	2,590	8,417	8,147	24.1	24.5
1960.....	5,453	5,224	2,809	2,636	8,262	7,860	22.8	23.0
1961.....	5,518	5,331	2,654	2,455	8,172	7,786	21.8	22.3
1962.....	5,787	5,388	2,928	2,643	8,715	8,031	21.5	21.7
1963.....	6,157	5,623	3,236	2,859	9,393	8,482	21.6	21.6
1964.....	7,004	6,139	3,940	3,334	10,944	9,473	23.1	22.7
1965.....	8,201	6,756	4,597	3,793	12,798	10,549	24.6	23.6

All economic sectors with the exception of trade reported increased capital outlays in 1965 over 1964. The primary industries increased by \$161,000,000 or 11 p.c., of which \$92,000,000 was in agriculture and fishing. Capital expenditures in the mining industry expanded in 1964 by \$112,000,000 but by only \$55,000,000 in 1965; in the latter year, higher output for gas and oil development was offset by lower expenditures for iron ore mines. Expenditures on new manufacturing facilities were up by \$407,000,000, or 22 p.c., mainly as a result of increased outlays in the chemical industry (for production of fertilizers, plastics, caustic soda, chlorine and synthetic fibres), in the pulp and paper industry, and in the transportation equipment industry (mostly for automobile manufacture). Capital expenditures for utilities (including transportation, communication and storage, and public utilities such as gas, water and electricity) were up by \$350,000,000 or 17 p.c.; much of this increase resulted from significantly larger programs by electric power producers, railways and urban transit systems, offset partially by lower expenditures for oil and gas pipelines. The 1965 housing activity was up by \$105,000,000, a modest increase of 5 p.c. Trade, finance and commercial services increased expenditures by \$176,000,000 or 17 p.c.



Institutional services (including hospitals, schools, universities, churches and welfare institutions) increased by \$238,000,000 or 31 p.c., the sharpest rate of increase. Of the latter, \$140,000,000 was for schools, \$87,000,000 for university buildings and \$18,000,000 for hospitals; other institutions, including churches, declined by some \$9,000,000. Capital outlays by governments at all levels rose by \$370,000,000, an increase of 25 p.c. (Government departments as defined for capital expenditures purposes include the part of government activity, excluding institutions, generally dependent on tax revenues for financial support as opposed to activities directly producing revenues on a service-rendered basis.) Spendings by the federal, provincial and municipal governments increased by \$105,600,000, \$187,200,000 and \$77,200,000, respectively. The high increase at the provincial level was due mainly to expanded highway construction programs.

All provinces except Newfoundland contributed to the 1965 increase in capital spending. In Newfoundland, higher expenditures on electric power, hospital and provincial government construction were offset by a sizable decline in iron ore investments. An advance of 33.3 p.c. recorded by Prince Edward Island was almost entirely due to increased federal and provincial expenditures. Nearly one third of the 31.9 p.c. increase in New Brunswick came from an expanded program for electric power construction and another third from greater outlays by all levels of government. Increases exceeding the national average of 16.9 p.c. were also recorded by British Columbia (25.4 p.c.), Nova Scotia (22.9 p.c.), Saskatchewan (21.4 p.c.) and Alberta (17.7 p.c.). Approximately one third of the increase in British Columbia was attributed to electric power construction; somewhat less than one quarter to the manufacturing sector, pulp and paper projects being the largest contributors; and about one sixth to institutions and governments at all levels. In Nova Scotia, nearly one half of the increase resulted from expenditures of government, and to expanded programs of school, university and hospital construction; manufacturing as a group contributed more than one third of the increase, the most notable advances being in the paper products, non-metallic mineral and chemical industries. In Saskatchewan, over one third of the gain was attributable to expanded programs by governments and to increased spendings for university and school construction and about two fifths to expanded outlays in the primary industries, with investments in agriculture and fisheries, petroleum and gas wells, and miscellaneous mining making the greatest contributions. In Alberta, more than two fifths of the increase was accounted for by expenditures for petroleum and gas wells, one fifth by institutions and governments, one tenth by agriculture and fisheries and a little less than one tenth by chemical products. The rates of increase in Ontario (16.1 p.c.) and in Quebec (14.3 p.c.) were smaller than the national average but in dollar volume their increases of \$602,000,000 and \$402,000,000, respectively, were the largest, followed by British Columbia with \$329,000,000. In Ontario, two fifths of the impetus came from the manufacturing sector with investments of the chemical, transportation equipment, paper products and textile industries making the greatest contributions; a little less than one third came from the outlays of governments and of institutions, with school and university construction showing the largest gains. In Quebec, spendings by governments and spendings for school, university and hospital construction accounted for more than two fifths of the increase; expanded programs by firms in the trade, financial and commercial sector contributed just under one quarter; utilities accounted for about one fifth and manufacturing for under one tenth. There was also some decline over the year in investments for iron ore development. In Manitoba, most of the 5.9-p.c. increase came from government spendings, although there were some increases in outlays for agriculture and fisheries. It might be noted that sharp year-to-year fluctuations in capital outlays in any one province are often associated with changing phases of a few large projects.

## 2.—Summary of Capital and Repair Expenditures, by Economic Sector, 1964 and 1965

NOTE.—Actual expenditures 1964; preliminary actual 1965.  
(Millions of dollars)

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total
Agriculture and fishing.....1964	195	641	836	77	174	251	272	815	1,087
1965	203	725	928	81	180	261	284	905	1,189
Forestry.....1964	39	49	88	18	39	57	57	88	145
1965	45	57	102	18	38	56	63	95	158
Mining, quarrying and oil wells.....1964	454	178	632	45	133	178	499	311	810
1965	541	146	687	51	143	194	592	289	881
Manufacturing.....1964	443	1,388	1,831	147	749	896	590	2,137	2,727
1965	569	1,669	2,238	145	746	891	714	2,415	3,129
Utilities.....1964	1,332	727	2,059	290	532	822	1,622	1,250	2,881
1965	1,472	946	2,418	299	555	854	1,771	1,501	3,272
Construction.....1964	14	183	197	6	168	174	20	351	371
1965	17	218	235	7	199	206	24	417	441
Housing.....1964	2,028	—	2,028	577	—	577	2,605	—	2,605
1965	2,133	—	2,133	619	—	619	2,752	—	2,752
Trade (wholesale and retail).1964	146	222	368	41	50	91	187	272	459
1965	151	217	368	42	55	97	193	272	465
Finance, insurance and real estate.....1964	290	52	342	20	5	25	310	57	367
1965	356	57	413	25	8	33	381	65	446
Commercial services.....1964	112	220	332	16	63	79	128	283	411
1965	192	245	437	18	65	83	210	310	520
Institutional services.....1964	648	123	771	61	18	79	709	141	850
1965	873	136	1,009	63	18	81	936	154	1,090
Government departments...1964	1,303	157	1,460	331	71	402	1,634	228	1,862
1965	1,649	181	1,830	335	63	398	1,984	244	2,228
<b>Totals.....1964</b>	<b>7,004</b>	<b>3,940</b>	<b>10,944</b>	<b>1,629</b>	<b>2,002</b>	<b>3,631</b>	<b>8,633</b>	<b>5,942</b>	<b>14,575</b>
<b>1965</b>	<b>8,201</b>	<b>4,597</b>	<b>12,798</b>	<b>1,703</b>	<b>2,070</b>	<b>3,773</b>	<b>9,904</b>	<b>6,667</b>	<b>16,571</b>

Details of some of the above economic sectors are given in Table 3. The value of construction work performed, together with statistics of contracts awarded and building permits issued in recent years, is covered in Section 2 of this Chapter. Housing is treated separately in Section 3.

## 3.—Capital and Repair Expenditures for Certain Economic Sectors, 1964 and 1965

NOTE.—Actual expenditures 1964; preliminary actual 1965.  
(Millions of dollars)

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total
MANUFACTURING									
Foods and beverages.....1964	53.6	122.8	176.4	17.8	77.2	95.0	71.4	200.0	271.4
.....1965	56.6	129.3	185.9	17.0	67.2	84.2	73.6	196.5	270.1
Tobacco products.....1964	2.4	6.0	8.4	1.2	3.1	4.3	3.6	9.1	12.7
.....1965	2.2	8.4	10.6	0.9	5.2	6.1	3.1	13.6	16.7
Rubber.....1964	5.7	18.1	23.8	1.3	12.2	13.5	7.0	30.3	37.3
.....1965	6.0	19.3	25.3	1.3	12.6	13.9	7.3	31.9	39.2
Leather.....1964	1.4	3.8	5.2	0.6	3.1	3.7	2.0	6.9	8.9
.....1965	1.5	3.1	4.6	0.5	2.7	3.2	2.0	5.8	7.8
Textile.....1964	23.7	67.9	91.6	5.3	26.0	31.3	29.0	93.9	122.9
.....1965	26.0	82.2	108.2	5.8	26.0	31.8	31.8	108.2	140.0
Clothing and knitting mills..1964	3.0	14.9	17.9	1.3	5.7	7.0	4.3	20.6	24.9
.....1965	4.3	13.6	17.9	1.3	5.3	6.6	5.6	18.9	24.5
Wood.....1964	15.5	45.5	61.0	6.9	42.4	49.3	22.4	87.9	110.3
.....1965	18.3	49.5	67.8	6.5	38.8	45.3	24.8	88.3	113.1
Furniture and fixtures.....1964	4.4	8.0	12.4	1.4	3.3	4.7	5.8	11.3	17.1
.....1965	6.5	6.5	13.0	1.6	2.7	4.3	8.1	9.2	17.3
Paper and allied industries...1964	69.4	249.4	318.8	11.0	124.3	135.2	80.4	373.7	454.1
.....1965	120.4	298.4	418.8	13.3	122.4	135.7	133.7	420.8	554.5
Printing, publishing and allied industries.....1964	17.1	38.5	55.6	3.8	8.5	12.3	20.9	47.0	67.9
.....1965	16.5	33.4	49.9	3.3	8.9	12.2	19.8	42.3	62.1
Primary metals.....1964	58.3	214.5	272.8	18.0	194.4	212.4	76.3	408.9	485.2
.....1965	52.6	199.2	251.8	19.1	210.6	229.7	71.7	409.8	481.5
Metal fabricating.....1964	17.9	54.7	72.6	6.3	32.9	39.2	24.2	87.6	111.8
.....1965	25.1	63.1	88.2	6.2	31.4	37.6	31.3	94.5	125.8
Machinery.....1964	19.2	35.4	54.6	3.9	12.9	16.8	23.1	48.3	71.4
.....1965	11.4	31.1	42.5	3.3	11.2	14.5	14.7	42.3	57.0
Transportation equipment...1964	44.4	90.6	135.0	10.6	46.4	57.0	55.0	137.0	192.0
.....1965	64.3	143.7	208.0	9.2	50.1	59.3	73.5	193.8	267.3
Electrical products.....1964	12.0	37.0	49.0	4.9	23.1	28.0	16.9	60.1	77.0
.....1965	15.4	45.6	61.0	4.6	22.8	27.4	20.0	68.4	88.4
Non-metallic mineral products.....1964	20.2	61.8	82.0	5.3	58.3	63.6	25.5	120.1	145.6
.....1965	24.2	67.9	92.1	5.6	50.7	56.3	29.8	118.6	148.4
Petroleum and coal products.1964	20.2	4.2	24.4	32.3	5.9	38.2	52.5	10.1	62.6
.....1965	29.2	9.3	38.5	29.3	6.7	36.0	58.5	16.0	74.5
Chemicals and chemical products.....1964	42.9	100.4	143.3	12.6	60.7	73.3	55.5	161.1	216.6
.....1965	76.2	192.9	269.1	13.9	61.5	75.4	90.1	254.4	344.5
Miscellaneous.....1964	11.4	20.1	31.5	2.4	8.7	11.1	13.8	28.8	42.6
.....1965	12.4	25.6	38.0	2.5	9.5	12.0	14.9	35.1	50.0
Capital items charged to operating expenses.....1964	—	194.3	194.3	—	—	—	—	194.3	194.3
.....1965	—	246.8	246.8	—	—	—	—	246.8	246.8
<b>Totals, Manufacturing...1964</b>	<b>442.7</b>	<b>1,387.9</b>	<b>1,830.6</b>	<b>146.9</b>	<b>749.1</b>	<b>896.0</b>	<b>589.6</b>	<b>2,137.0</b>	<b>2,726.6</b>
<b>.....1965</b>	<b>569.1</b>	<b>1,668.9</b>	<b>2,238.0</b>	<b>145.2</b>	<b>746.3</b>	<b>891.5</b>	<b>714.3</b>	<b>2,415.2</b>	<b>3,129.5</b>



## 3.—Capital and Repair Expenditures for Certain Economic Sectors, 1964 and 1965—continued

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total
MINING									
Metal mines.....1964	147.0	92.8	239.8	17.7	84.4	102.1	164.7	177.2	341.9
1965	114.3	75.2	189.5	19.0	100.1	119.1	133.3	175.3	308.6
Iron mines.....1964	85.0	58.7	143.7	4.6	42.6	47.2	89.6	101.3	190.9
1965	27.8	34.9	62.7	4.6	56.8	61.4	52.4	91.7	124.1
Other metal mines.....1964	62.0	34.1	96.1	13.1	41.8	54.9	75.1	75.9	151.0
1965	86.5	40.3	126.8	14.4	43.3	67.7	100.9	83.6	184.5
Mineral fuels.....1964	270.6	40.5	311.1	23.6	10.8	34.4	294.2	51.3	345.5
1965	374.6	27.8	402.4	29.2	5.7	34.9	403.8	33.5	437.3
Coal mines.....1964	3.9	3.9	7.8	0.6	4.1	4.7	4.5	8.0	12.5
1965	0.7	3.3	4.0	0.4	4.2	4.6	1.1	7.5	8.6
Petroleum and gas wells...1964	223.2	34.5	262.7	18.6	6.0	24.6	246.8	40.5	287.3
1965	354.4	10.3	364.7	24.5	0.5	25.0	373.9	10.8	389.7
Natural gas processing plants.....1964	33.5	2.1	40.6	4.4	0.7	5.1	42.9	2.8	45.7
1965	19.5	14.2	33.7	4.3	1.0	5.3	23.8	15.2	39.0
Other mining.....1964	36.7	45.0	81.7	3.2	37.9	41.1	39.9	82.9	122.8
1965	52.6	42.7	95.3	2.9	36.8	39.7	55.5	79.5	135.0
<b>Totals, Mining.....1964</b>	<b>454.3</b>	<b>178.3</b>	<b>632.6</b>	<b>44.5</b>	<b>133.1</b>	<b>177.6</b>	<b>498.8</b>	<b>311.4</b>	<b>810.2</b>
<b>1965</b>	<b>541.5</b>	<b>145.7</b>	<b>687.2</b>	<b>51.1</b>	<b>142.6</b>	<b>193.7</b>	<b>592.6</b>	<b>288.3</b>	<b>880.9</b>
UTILITIES									
Electric power.....1964	588.0	163.8	751.8	48.2	35.7	83.9	636.2	199.5	835.7
1965	755.5	192.6	948.1	54.3	37.3	91.6	809.8	229.9	1,039.7
Gas distribution.....1964	54.5	13.8	68.3	6.0	2.2	8.2	60.5	16.0	76.5
1965	56.5	17.4	73.9	5.4	2.1	7.5	61.9	19.5	81.4
Railway transport.....1964	162.6	63.8	226.4	141.1	203.6	344.7	303.7	267.4	571.1
1965	129.1	161.1	290.2	141.1	207.2	348.3	270.2	368.3	638.5
Urban transit systems.....1964	78.4	8.0	86.4	3.5	19.1	22.6	81.9	27.1	109.0
1965	79.0	52.8	131.8	2.7	15.8	18.5	81.7	68.6	150.3
Water transport and services.1964	15.0	57.1	72.1	6.5	19.3	25.8	21.5	76.4	97.9
1965	32.7	65.0	97.7	10.2	16.7	26.9	42.9	81.7	124.6
Motor transport.....1964	7.0	62.5	69.5	2.1	64.9	67.0	9.1	127.4	136.5
1965	5.6	64.0	69.6	3.6	68.8	72.4	9.2	132.8	142.0
Grain elevators.....1964	8.8	3.8	12.6	5.5	2.3	7.8	14.3	6.1	20.4
1965	10.8	4.9	15.7	6.1	2.2	8.3	16.9	7.1	24.0
Telephones and telegraph and cable systems.....1964	146.0	263.3	409.3	44.8	121.1	165.9	190.8	384.4	575.2
1965	154.0	277.6	431.6	46.5	137.1	183.6	200.5	414.7	615.2
Broadcasting.....1964	5.4	15.7	21.1	0.9	3.9	4.8	6.3	19.6	25.9
1965	8.3	11.9	20.2	0.5	2.5	3.0	8.8	14.4	23.2
Water systems.....1964	64.6	3.7	68.3	21.5	2.1	23.6	86.1	5.8	91.9
1965	100.1	7.1	107.2	20.5	2.2	22.7	120.6	9.3	129.9
Other utilities.....1964	201.9	54.9	256.8	9.3	58.0	67.3	211.2	112.9	324.1
1965	140.3	42.5	182.8	8.0	63.1	71.1	148.3	105.6	253.9
Capital items charged to operating expenses.....1964	—	16.2	16.2	—	—	—	—	16.2	16.2
1965	—	48.9	48.9	—	—	—	—	48.9	48.9
<b>Totals, Utilities.....1964</b>	<b>1,332.2</b>	<b>726.6</b>	<b>2,058.8</b>	<b>289.4</b>	<b>532.2</b>	<b>821.6</b>	<b>1,621.6</b>	<b>1,258.8</b>	<b>2,880.4</b>
<b>1965</b>	<b>1,471.9</b>	<b>945.8</b>	<b>2,417.7</b>	<b>298.9</b>	<b>555.0</b>	<b>853.9</b>	<b>1,770.8</b>	<b>1,500.8</b>	<b>3,271.6</b>

## 3.—Capital and Repair Expenditures for Certain Economic Sectors, 1964 and 1965—concluded

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total
TRADE									
Wholesale.....1964	36.3	44.3	80.6	7.4	11.6	19.0	43.7	55.9	99.6
.....1965	26.4	39.9	66.3	7.7	15.9	23.6	34.1	55.8	89.9
Chain stores.....1964	25.3	43.0	68.3	5.8	7.8	13.6	31.1	50.8	81.9
.....1965	28.1	44.4	72.5	6.3	8.3	14.6	34.4	52.7	87.1
Independent stores.....1964	38.5	66.6	105.1	11.4	13.5	24.9	49.9	80.1	130.0
.....1965	42.6	67.6	110.2	10.7	13.0	23.7	53.3	80.6	133.9
Department stores.....1964	17.5	17.8	35.3	5.0	3.4	8.4	22.5	21.2	43.7
.....1965	16.5	15.0	31.5	5.7	3.1	8.8	22.2	18.1	40.3
Automotive trade.....1964	28.6	30.5	59.1	11.4	14.0	25.4	40.0	44.5	84.5
.....1965	37.1	30.1	67.2	11.6	14.4	26.0	48.7	44.5	93.2
Capital items charged to operating expenses.....1964	—	20.2	20.2	—	—	—	—	20.2	20.2
.....1965	—	20.1	20.1	—	—	—	—	20.1	20.1
<b>Totals, Trade.....1964</b>	<b>146.2</b>	<b>222.4</b>	<b>368.6</b>	<b>41.0</b>	<b>50.3</b>	<b>91.3</b>	<b>187.2</b>	<b>272.7</b>	<b>459.9</b>
<b>.....1965</b>	<b>150.7</b>	<b>217.1</b>	<b>367.8</b>	<b>42.0</b>	<b>54.7</b>	<b>96.7</b>	<b>192.7</b>	<b>271.8</b>	<b>464.5</b>
INSTITUTIONS									
Churches.....1964	40.4	4.0	44.4	8.4	0.9	9.3	48.8	4.9	53.7
.....1965	37.3	3.2	40.5	6.1	0.7	6.8	43.4	3.9	47.3
Universities.....1964	150.2	27.3	177.5	5.8	0.7	6.5	156.0	28.0	184.0
.....1965	233.9	30.1	264.0	6.6	0.9	7.5	240.5	31.0	271.5
Schools.....1964	289.3	49.4	338.7	25.0	8.8	33.8	314.3	58.2	372.5
.....1965	416.7	63.6	480.3	29.0	6.8	35.8	445.7	70.4	516.1
Hospitals.....1964	145.0	38.3	183.3	19.6	7.3	26.9	164.6	45.6	210.2
.....1965	164.8	37.1	201.9	20.0	9.1	29.1	184.8	46.2	231.0
Other institutional services.....1964	23.4	4.3	27.7	2.0	0.4	2.4	25.4	4.7	30.1
.....1965	20.2	2.3	22.5	1.4	0.3	1.7	21.6	2.6	24.2
<b>Totals, Institutions.....1964</b>	<b>648.3</b>	<b>123.3</b>	<b>771.6</b>	<b>60.8</b>	<b>18.1</b>	<b>78.9</b>	<b>709.1</b>	<b>141.4</b>	<b>850.5</b>
<b>.....1965</b>	<b>872.9</b>	<b>136.3</b>	<b>1,009.2</b>	<b>63.1</b>	<b>17.8</b>	<b>80.9</b>	<b>936.0</b>	<b>154.1</b>	<b>1,090.1</b>
FINANCE									
Banks.....1964	30.3	14.1	44.4	4.5	2.1	6.6	34.8	16.2	51.0
.....1965	29.4	17.6	47.0	6.4	3.2	9.6	35.8	20.8	56.6
Insurance, trust and loan companies.....1964	16.8	9.7	26.5	3.4	0.8	4.2	20.2	10.5	30.7
.....1965	15.3	8.7	24.0	2.9	1.2	4.1	18.2	9.9	28.1
Other financial.....1964	242.4	28.0	270.4	12.4	2.4	14.8	254.8	30.4	285.2
.....1965	310.8	31.2	342.0	15.7	3.1	18.8	326.5	34.3	360.8
<b>Totals, Finance.....1964</b>	<b>289.5</b>	<b>51.8</b>	<b>341.3</b>	<b>20.3</b>	<b>5.3</b>	<b>25.6</b>	<b>309.8</b>	<b>57.1</b>	<b>366.9</b>
<b>.....1965</b>	<b>355.5</b>	<b>57.5</b>	<b>413.0</b>	<b>25.0</b>	<b>7.5</b>	<b>32.5</b>	<b>380.5</b>	<b>65.0</b>	<b>445.5</b>
COMMERCIAL SERVICES									
Laundries and dry-cleaners...1964	2.3	8.7	11.0	1.3	4.4	5.7	3.6	13.1	16.7
.....1965	1.6	7.2	8.8	1.1	3.8	4.9	2.7	11.0	13.7
Theatres.....1964	0.3	1.5	1.8	1.3	0.6	1.9	1.6	2.1	3.7
.....1965	2.9	2.4	5.3	1.5	0.6	2.1	4.4	3.0	7.4
Hotels.....1964	41.3	13.8	55.1	11.0	6.8	17.8	52.3	20.6	72.9
.....1965	63.7	16.6	80.3	10.7	7.2	17.9	74.4	23.8	98.2
Other commercial services...1964	68.4	196.3	264.7	2.9	50.8	53.7	71.3	247.1	318.4
.....1965	123.5	218.7	342.2	4.6	53.6	58.2	128.1	272.3	400.4
<b>Totals, Commercial Services.....1964</b>	<b>112.3</b>	<b>220.3</b>	<b>332.6</b>	<b>16.5</b>	<b>62.6</b>	<b>79.1</b>	<b>128.8</b>	<b>282.9</b>	<b>411.7</b>
<b>.....1965</b>	<b>191.7</b>	<b>244.9</b>	<b>436.6</b>	<b>17.9</b>	<b>65.2</b>	<b>83.1</b>	<b>209.6</b>	<b>310.1</b>	<b>519.7</b>

A summary of the capital expenditures in each province for the years 1964 and 1965 is given in Table 4. Such expenditures represent gross additions to the capital stocks of the province and are a reflection of economic activity in the area, although the actual production of these assets may generate major employment and income-giving effects in other regions. For example, the spending of millions of dollars on oil refineries and pipelines in Western Canada means activity in the steel industries of Ontario as well as construction activity in the western provinces.

#### 4.—Capital and Repair Expenditures, by Province, 1964 and 1965

NOTE.—Actual expenditures 1964; preliminary actual 1965.  
(Millions of dollars)

Province and Year	Capital			Repair			Capital and Repair		
	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total
Newfoundland.....1964	154	77	231	28	41	69	182	118	300
.....1965	155	73	228	35	51	86	190	124	314
Prince Edward Island.....1964	26	13	39	8	5	13	34	18	52
.....1965	30	22	52	14	7	21	44	29	73
Nova Scotia.....1964	160	110	270	55	51	106	215	161	376
.....1965	199	133	332	57	55	112	256	183	444
New Brunswick.....1964	163	94	257	43	44	87	206	138	344
.....1965	218	121	339	46	46	92	264	167	431
Quebec.....1964	1,986	842	2,828	379	478	857	2,365	1,320	3,685
.....1965	2,281	951	3,232	404	498	902	2,685	1,449	4,134
Ontario.....1964	2,249	1,498	3,747	577	772	1,349	2,826	2,270	5,096
.....1965	2,567	1,782	4,349	610	800	1,410	3,177	2,582	5,759
Manitoba.....1964	332	196	528	89	102	191	421	298	719
.....1965	356	203	559	91	99	190	447	302	749
Saskatchewan.....1964	381	267	648	95	101	196	476	368	844
.....1965	479	308	787	95	96	191	574	404	978
Alberta.....1964	753	347	1,100	167	155	322	920	502	1,422
.....1965	879	416	1,295	164	164	328	1,043	580	1,623
British Columbia.....1964	800	496	1,296	188	253	441	988	749	1,737
.....1965	1,037	588	1,625	187	254	441	1,224	842	2,066
<b>Totals.....1964</b>	<b>7,004</b>	<b>3,940</b>	<b>10,944</b>	<b>1,629</b>	<b>2,002</b>	<b>3,631</b>	<b>8,633</b>	<b>5,942</b>	<b>14,575</b>
<b>.....1965</b>	<b>8,201</b>	<b>4,597</b>	<b>12,798</b>	<b>1,763</b>	<b>2,070</b>	<b>3,773</b>	<b>9,901</b>	<b>6,667</b>	<b>16,571</b>

## Section 2.—Construction Statistics

### Subsection 1.—Value of Construction Work Performed

Statistics of the construction industry are based largely on information received at the same time and from the same sources as the data on capital expenditures that appear in Section 1. The data represent the estimated total value of all new and repair construction performed by contractors, by labour forces of utility, manufacturing, mining and logging firms, and by government departments, home-owner builders and other persons or firms not primarily engaged in the construction industry. Table 5 shows the value of new and repair construction work performed during the period 1956-65 and Table 6 shows the value of such work performed by contractors and others in the years 1962-65.



## 5.—Value of New and Repair Construction Work Performed, 1956-65

NOTE.—Actual expenditures 1956-64; preliminary actual 1965.

Year	New	Repair	Total	Total Construction as Percentage of Gross National Product
	\$'000,000	\$'000,000	\$'000,000	p.c.
1956.....	5,272	1,182	6,454	21.1
1957.....	5,785	1,238	7,023	22.0
1958.....	5,831	1,261	7,092	21.6
1959.....	5,710	1,367	7,077	20.3
1960.....	5,454	1,432	6,886	19.0
1961.....	5,518	1,456	6,974	18.7
1962.....	5,787	1,509	7,296	18.0
1963.....	6,157	1,559	7,716	17.8
1964.....	7,004	1,630	8,634	18.2
1965.....	8,201	1,704	9,905	19.0

## 6.—Value of Construction Work Performed, by Contractors and Others, 1962-65

NOTE.—Actual expenditures 1962-64; preliminary actual 1965.  
(Millions of dollars)

Item	1962	1963	1964	1965
<b>Contract Construction.....</b>	<b>5,710</b>	<b>6,034</b>	<b>6,833</b>	<b>8,117</b>
New.....	4,900	5,213	5,937	7,113
Repair.....	810	821	896	1,004
<b>Other Construction<sup>1</sup>.....</b>	<b>1,586</b>	<b>1,682</b>	<b>1,801</b>	<b>1,788</b>
New.....	887	944	1,067	1,088
Repair.....	699	738	734	700
<b>Totals, Construction.....</b>	<b>7,296</b>	<b>7,716</b>	<b>8,634</b>	<b>9,905</b>
New.....	5,787	6,157	7,004	8,201
Repair.....	1,509	1,559	1,630	1,704

<sup>1</sup> Work done by the labour forces of utilities, manufacturing, mining and logging firms and by government departments, home-owner builders and other persons or firms not primarily engaged in the construction industry.

Table 7 gives estimates of total expenditures in Canada on each type of construction for which information is available.

## 7.—Value of Construction Work Performed, by Type of Structure, 1964 and 1965

NOTE.—Actual expenditures 1964; preliminary actual 1965.

Type of Structure	1964			1965		
	New	Repair	Total	New	Repair	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Building Construction</b>						
<b>Residential.....</b>	<b>2,027,500</b>	<b>577,000</b>	<b>2,604,500</b>	<b>2,133,300</b>	<b>619,100</b>	<b>2,752,400</b>
<b>Industrial.....</b>	<b>522,058</b>	<b>144,354</b>	<b>666,412</b>	<b>615,456</b>	<b>146,201</b>	<b>761,657</b>
Factories, plants, workshops, food canneries.....	408,875	114,052	522,927	539,110	115,488	654,598
Mine and mine mill buildings.....	93,487	11,009	104,496	60,769	11,835	72,604
Railway stations, offices, roadway buildings.....	11,540	13,262	24,802	9,414	12,449	21,863
Railway shops, engine houses, water and fuel stations.....	8,156	6,031	14,187	6,163	6,429	12,592

## 7.—Value of Construction Work Performed, by Type of Structure, 1964 and 1965—continued

Type of Structure	1964			1965		
	New	Repair	Total	New	Repair	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Building Construction</b> —concluded						
<b>Commercial</b> .....	<b>716,166</b>	<b>129,800</b>	<b>845,966</b>	<b>881,423</b>	<b>144,489</b>	<b>1,025,912</b>
Warehouses, storehouses, refrigerated storage, etc.....	58,748	11,261	70,009	72,086	15,120	87,206
Grain elevators.....	10,641	6,526	17,167	10,809	7,729	18,538
Hotels, clubs, restaurants, cafeterias, tourist cabins.....	59,230	13,467	72,697	81,591	12,658	94,249
Office buildings.....	325,069	44,558	369,627	381,685	57,391	439,076
Stores, retail and wholesale.....	174,913	31,035	205,948	201,903	31,860	233,763
Garages and service stations.....	33,709	11,438	45,147	43,550	11,124	54,674
Theatres, arenas, amusement and recreational buildings.....	51,533	10,304	61,837	88,133	7,471	95,604
Laundries and dry-cleaning establishments.....	2,323	1,211	3,534	1,666	1,136	2,802
<b>Institutional</b> .....	<b>693,332</b>	<b>72,476</b>	<b>765,808</b>	<b>933,343</b>	<b>74,094</b>	<b>1,007,437</b>
Schools and other educational buildings.....	439,616	32,867	472,483	637,584	37,710	675,294
Churches and other religious buildings.....	42,092	8,796	50,888	37,673	6,210	43,883
Hospitals, sanatoria, clinics, first-aid stations, etc.....	156,741	22,276	179,017	175,442	22,581	198,023
Other.....	54,883	8,537	63,420	82,644	7,593	90,237
<b>Other Building</b> .....	<b>211,579</b>	<b>85,142</b>	<b>296,721</b>	<b>246,102</b>	<b>84,547</b>	<b>330,649</b>
Farm buildings (excluding dwellings).....	129,384	50,260	179,644	134,853	52,743	187,596
Broadcasting, radio and television, relay and booster stations, telephone exchanges.....	34,821	3,090	37,911	36,764	2,719	39,483
Aeroplane hangars.....	686	3,506	4,192	845	3,427	4,272
Passenger terminals, bus, boat or air.....	5,856	863	6,719	9,902	487	10,389
Armouries, barracks, drill halls, etc.....	5,754	14,409	20,163	7,670	13,600	21,270
Bunkhouses, dormitories, camp cookeries, bush depots and camps.....	13,389	4,806	18,195	22,062	4,517	26,579
Miscellaneous.....	22,189	8,208	30,397	34,006	7,054	41,060
<b>Totals, Building Construction..</b>	<b>4,170,635</b>	<b>1,008,772</b>	<b>5,179,407</b>	<b>4,809,624</b>	<b>1,068,431</b>	<b>5,878,055</b>
<b>Engineering Construction</b>						
<b>Marine</b> .....	<b>51,314</b>	<b>16,238</b>	<b>67,552</b>	<b>79,211</b>	<b>18,885</b>	<b>98,096</b>
Docks, wharves, piers, breakwaters.....	37,583	8,726	46,309	59,941	10,560	70,501
Retaining walls, embankments, riprapping.....	5,597	918	6,515	4,890	1,829	6,719
Canals and waterways.....	2,937	1,468	4,405	6,503	1,345	7,848
Dredging and pile driving.....	2,167	3,447	5,614	2,290	3,395	5,685
Dyke construction.....	409	123	532	584	102	686
Logging booms.....	537	760	1,297	775	772	1,547
Other.....	2,084	796	2,880	4,228	882	5,110
<b>Road, Highway and Aerodrome...</b>	<b>770,394</b>	<b>194,218</b>	<b>964,612</b>	<b>910,285</b>	<b>198,050</b>	<b>1,108,335</b>
Hard surfaced or paved streets, highways, parking lots, etc.....	506,813	109,416	616,229	664,370	134,847	799,217
Gravel or stone streets, highways, roads, parking lots, etc.....	138,951	42,848	181,799	117,101	27,962	145,063
Dirt, clay or other streets, roads, parking lots, etc.....	66,010	26,322	92,332	64,746	21,521	86,267
Grading, scraping, oiling, filling... ..	26,184	8,480	34,664	25,909	7,310	33,219
Sidewalks, paths.....	17,834	4,530	22,364	19,162	4,121	23,283
Aerodromes, landing fields, runways, tarmac.....	14,602	2,622	17,224	18,997	2,289	21,286

## 7.—Value of Construction Work Performed, by Type of Structure, 1964 and 1965—concluded

Type of Structure	1964			1965		
	New	Repair	Total	New	Repair	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Engineering Construction</b> —concluded						
<b>Waterworks and Sewage Systems.</b>	<b>234,699</b>	<b>50,415</b>	<b>285,114</b>	<b>282,626</b>	<b>47,131</b>	<b>329,757</b>
Tile drains, drainage ditches, storm sewers.....	17,320	6,906	24,226	20,889	8,027	28,916
Water mains, hydrants and serv- ices.....	74,291	26,163	100,454	94,193	23,922	118,115
Sewage systems and connections..	129,289	13,891	143,180	139,397	9,990	149,387
Pumping stations, water.....	10,612	2,526	13,138	20,998	1,941	22,939
Water storage tanks.....	3,187	929	4,116	7,149	3,251	10,400
<b>Dams and Irrigation.....</b>	<b>160,542</b>	<b>9,341</b>	<b>169,883</b>	<b>226,573</b>	<b>9,613</b>	<b>236,186</b>
Dams and reservoirs.....	143,777	2,406	146,183	198,394	2,521	200,915
Irrigation and land reclamation projects.....	16,765	6,935	23,700	28,179	7,092	35,271
<b>Electric Power Construction.....</b>	<b>481,866</b>	<b>59,155</b>	<b>541,021</b>	<b>605,184</b>	<b>62,503</b>	<b>667,687</b>
Electric power generating plants, including water conveying and controlling structures.....	156,973	13,494	170,467	249,444	14,761	264,205
Electric transformer stations.....	65,321	4,220	69,541	94,063	5,103	99,166
Power transmission and distribu- tion lines, trolley wires.....	243,416	32,315	275,731	245,475	36,367	281,842
Street lighting.....	16,156	9,126	25,282	16,202	6,272	22,474
<b>Railway, Telephone and Tele- graph.....</b>	<b>254,051</b>	<b>157,275</b>	<b>411,326</b>	<b>244,954</b>	<b>159,093</b>	<b>404,047</b>
Railway tracks and roadbed.....	124,580	104,214	228,794	105,434	103,883	209,317
Signals and interlockers.....	9,356	8,635	17,991	8,370	9,596	17,966
Telegraph and telephone lines, underground and marine cables..	120,115	44,426	164,541	131,150	45,614	176,764
<b>Gas and Oil Facilities.....</b>	<b>478,090</b>	<b>68,665</b>	<b>546,755</b>	<b>507,397</b>	<b>68,843</b>	<b>576,240</b>
Gas mains and services.....	48,056	5,247	53,303	68,449	4,859	73,308
Pumping stations, oil.....	4,014	1,903	5,917	6,603	1,521	8,124
Pumping stations, gas.....	29,640	571	30,211	2,015	465	2,480
Oil storage tanks.....	16,836	2,513	19,349	6,752	2,653	9,405
Gas storage tanks.....	1,184	76	1,260	933	125	1,058
Oil pipelines.....	24,652	2,599	27,251	33,798	1,939	35,737
Gas pipelines.....	95,538	1,308	96,846	28,842	953	29,795
Oil wells.....	170,320	16,870	187,190	267,087	20,466	287,543
Gas wells.....	29,872	1,296	31,168	41,771	2,963	44,734
Oil refinery—processing units.....	20,090	31,840	51,930	32,536	28,477	61,013
Natural gas cleaning plants.....	37,888	4,442	42,330	18,611	4,432	23,043
<b>Other Engineering.....</b>	<b>402,659</b>	<b>65,860</b>	<b>468,519</b>	<b>535,250</b>	<b>71,801</b>	<b>607,051</b>
Bridges, trestles, culverts, over- passes, viaducts.....	180,380	31,377	211,757	221,979	30,864	252,843
Tunnels and subways.....	73,440	72	73,512	75,318	74	75,392
Incinerators.....	133	21	154	69	15	84
Park systems, landscaping, sod- ding, etc.....	5,704	4,213	9,917	10,729	5,215	15,944
Swimming pools, tennis courts, outdoor recreation facilities.....	2,146	452	2,598	4,286	1,655	5,941
Mine shafts and other below surface workings.....	41,539	2,982	45,521	54,655	3,538	58,193
Fences, snowsheds, signs, guard- rails.....	26,922	13,712	40,634	26,311	12,641	38,952
Miscellaneous.....	72,395	12,031	84,426	141,903	17,799	159,702
<b>Totals, Engineering Construc- tion.....</b>	<b>2,833,615</b>	<b>621,167</b>	<b>3,454,782</b>	<b>3,391,480</b>	<b>635,919</b>	<b>4,027,399</b>
<b>Totals, All Construction..</b>	<b>7,004,250</b>	<b>1,629,939</b>	<b>8,634,189</b>	<b>8,201,104</b>	<b>1,704,350</b>	<b>9,905,454</b>

Principal statistics of the construction industry are shown by province and for contractors, utilities, governments and others in Table 8. The statistics given for Canada as a whole may be considered as relatively accurate but those for individual provinces and



by class of builder are approximations only. All estimates given for cost of materials used are based on ratios of this item to total value of work performed, derived from annual surveys of construction work and applied to the total value-of-work figures. Estimates of labour content are similarly based but, in addition, are adjusted to include working owners and partners and their withdrawals. Although the ratios were calculated in some detail by type of industry, still further refinements are required. There are also some difficulties in obtaining the precise location of projects undertaken or to be undertaken by large companies operating in a number of provinces. However, if used with these qualifications in mind, the table provides useful estimates.

**8.—Labour Content, Cost of Materials and Value of Work Performed in Construction, by Province and by Employer, 1964 and 1965 with Totals for 1961-65**

NOTE.—Actual expenditures 1961-64; preliminary actual 1965. Comparable figures from 1953 are given in the corresponding table of previous Year Books beginning with the 1957-58 edition.

Province or Employer and Year	Labour Content		Cost of Materials Used	Value of Work Performed
	Number	Value		
Province		\$'000	\$'000	\$'000
Newfoundland.....1964	12,542	55,963	76,674	182,079
.....1965	12,397	57,444	77,621	189,972
Prince Edward Island.....1964	2,537	9,355	15,671	33,538
.....1965	3,048	11,878	20,327	43,571
Nova Scotia.....1964	18,232	71,940	103,364	215,779
.....1965	19,768	82,765	122,782	255,458
New Brunswick.....1964	17,224	67,207	104,490	205,723
.....1965	20,284	83,315	133,269	264,339
Quebec.....1964	150,163	755,602	1,219,915	2,365,945
.....1965	159,948	847,694	1,384,254	2,684,682
Ontario.....1964	177,111	957,607	1,391,038	2,825,132
.....1965	187,844	1,071,410	1,569,106	3,177,076
Manitoba.....1964	30,579	142,465	202,272	421,133
.....1965	30,600	150,280	214,848	447,699
Saskatchewan.....1964	30,210	146,402	236,652	476,900
.....1965	33,810	172,829	282,137	574,381
Alberta.....1964	53,463	282,535	418,845	919,871
.....1965	56,806	317,583	472,308	1,043,640
British Columbia.....1964	55,316	323,013	472,452	988,089
.....1965	64,308	396,711	588,456	1,224,636
<b>Totals.....1961</b>	<b>530,854</b>	<b>2,349,229</b>	<b>3,273,513</b>	<b>6,974,379</b>
<b>.....1962</b>	<b>528,921</b>	<b>2,475,670</b>	<b>3,507,738</b>	<b>7,296,039</b>
<b>.....1963</b>	<b>523,909</b>	<b>2,560,877</b>	<b>3,736,494</b>	<b>7,716,011</b>
<b>.....1964</b>	<b>547,377</b>	<b>2,812,089</b>	<b>4,241,373</b>	<b>8,634,189</b>
<b>.....1965</b>	<b>588,813</b>	<b>3,191,909</b>	<b>4,865,108</b>	<b>9,905,454</b>
Employer				
Contractors.....1964	397,275	2,074,701	3,441,860	6,833,265
.....1965	446,744	2,459,145	4,067,790	8,117,044
Utilities.....1964	72,042	387,462	446,678	911,663
.....1965	68,632	387,757	446,762	912,199
Governments.....1964	47,897	206,617	167,552	504,945
.....1965	44,191	199,565	161,576	485,052
Others.....1964	30,163	143,309	185,283	384,316
.....1965	29,246	145,442	188,980	391,159

## Subsection 2.—Contracts Awarded and Building Permits Issued

In this Subsection, statistics are given of work actually in sight either as contracts awarded or as building permits. These figures are related to those of work performed during the year only as far as the work thus provided for is completed and duly reported in the capital expenditure surveys. Further, values of contracts awarded, and especially of building permits, are estimates (more often under-estimates) of work to be done.

## 9.—Value of Construction Contracts Awarded, 1946-65

(SOURCE: *Southam Building Guide*)

NOTE.—Figures for the years 1926-45 are given in the corresponding table of the 1962 Year Book, p. 682.

Year	Value of Construction Contracts	Year	Value of Construction Contracts	Year	Value of Construction Contracts
	\$		\$		\$
1946.....	663,355,100	1953.....	2,017,060,700	1960.....	3,053,749,500
1947.....	718,137,100	1954.....	2,154,959,200	1961.....	3,220,937,300
1948.....	954,082,400	1955.....	3,183,592,000	1962.....	3,351,717,500
1949.....	1,143,547,300	1956.....	3,426,905,500	1963.....	3,685,634,300
1950.....	1,525,764,700	1957.....	2,894,168,100	1964.....	4,413,077,400
1951.....	2,295,499,200	1958.....	3,593,709,200	1965.....	5,243,664,500
1952.....	1,812,177,600	1959.....	3,219,073,300		

<sup>1</sup> Newfoundland included from Apr. 1, 1949.

## 10.—Value of Construction Contracts Awarded, by Province and Type of Construction, 1964 and 1965

(SOURCE: *Southam Building Guide*)

Province and Type of Construction	1964	1965	Type of Construction	1964	1965
	\$'000	\$'000		\$'000	\$'000
Newfoundland.....	73,575	65,402	<b>Business.....</b>	<b>1,452,488</b>	<b>1,751,364</b>
Prince Edward Island.....	4,721	6,899	Churches.....	37,785	43,860
Nova Scotia.....	135,604	90,921	Public garages.....	10,798	29,303
New Brunswick.....	73,087	55,701	Hospitals.....	149,911	175,743
Quebec.....	1,158,353	1,317,832	Hotels and clubs.....	123,552	100,778
Ontario.....	1,801,229	2,145,567	Office buildings.....	306,025	260,973
Manitoba.....	188,553	241,420	Public buildings.....	164,681	141,063
Saskatchewan.....	207,490	246,619	Schools.....	416,303	578,120
Alberta.....	369,455	360,798	Stores.....	126,737	214,650
British Columbia.....	401,010	712,505	Theatres.....	15,798	120,279
			Warehouses.....	100,898	86,595
<b>Totals.....</b>	<b>4,413,077</b>	<b>5,243,664</b>	<b>Industrial.....</b>	<b>506,505</b>	<b>714,598</b>
<b>Residential.....</b>	<b>1,487,285</b>	<b>1,519,739</b>	<b>Engineering.....</b>	<b>966,799</b>	<b>1,257,963</b>
Apartment.....	667,723	692,745	Bridges.....	111,159	102,660
Residences.....	819,562	826,994	Marine.....	53,552	53,453
			Sewerage and waterworks.....	204,128	195,684
			Roads and streets.....	284,331	443,225
			Power and communications.....	123,562	303,451
			Miscellaneous.....	210,067	159,490

**Building Permits.**—The estimated value of proposed construction is indicated by the value of building permits issued. Figures of building permits issued are collected for more than 1,400 municipalities across the country and are available for the individual municipalities, for metropolitan areas, for provinces and for economic areas in Quebec, Ontario and Manitoba.

The total value of permits issued for construction work exceeded \$3,800,000,000 for 1965, the highest figure on record and an increase of 16.6 p.c. over 1964. Residential construction was 8.8 p.c. higher, new construction and repairs being up 9.1 p.c. and 1.6

p.c., respectively. Non-residential construction increased 24.2 p.c. over 1964, with increases of 13.0 p.c. in industrial, 31.0 p.c. in commercial and 24.5 p.c. in institutional and government construction. All provinces except Prince Edward Island recorded gains in 1965, the largest percentage increase being reported by Newfoundland. Table 11 shows the value of building permits issued in each of 50 municipalities for 1964 and 1965.

### 11.—Estimated Value of Proposed Construction as Indicated by Building Permits Issued in 50 Municipalities, 1964 and 1965

NOTE.—Comparable figures from 1966 are given in the corresponding table of previous Year Books beginning with the 1962 edition.

Province and Municipality	1964 <sup>1</sup>	1965	Province and Municipality	1964	1965
	\$'000	\$'000		\$'000	\$'000
<b>Newfoundland—</b>			<b>Ontario—concluded</b>		
St. John's.....	15,834	31,569	Port Arthur.....	6,976	9,787
<b>Prince Edward Island—</b>			Scarborough Township.....	59,523	92,270
Charlottetown.....	7,075	4,668	Toronto.....	167,670	212,184
<b>Nova Scotia—</b>			Toronto Township.....	46,030	64,092
Halifax.....	14,856	33,515	Windsor.....	17,839	26,590
<b>New Brunswick—</b>			York North Township.....	154,542	182,512
Fredericton.....	15,310	10,235	York Township.....	7,642	16,997
Moncton.....	7,164	12,158	<b>Manitoba—</b>		
Saint John.....	10,332	5,564	Fort Garry.....		
<b>Quebec—</b>			St. Boniface.....	97,158 <sup>1</sup>	97,177 <sup>1</sup>
LaSalle.....	11,594	21,559	St. James.....		
Montreal.....	243,082	300,553	Winnipeg.....		
Quebec.....	15,690	23,073	<b>Saskatchewan—</b>		
St. Laurent.....	17,853	24,744	Moose Jaw.....	4,195	5,778
Ste. Foy.....	19,509	22,416	Prince Albert.....	2,828	5,003
Sept Îles.....	4,304	3,613	Regina.....	36,226	50,669
Sherbrooke.....	16,061	17,856	Saskatoon.....	35,465	41,086
Trois-Rivières.....	5,869	7,691	<b>Alberta—</b>		
<b>Ontario—</b>			Calgary.....	95,559	129,028
Brampton.....	16,923	11,001	Edmonton.....	103,111	125,283 <sup>2</sup>
Burlington.....	21,811	27,131	Jasper Place.....	669	
Etobicoke Township.....	80,627	88,111	Lethbridge.....	5,600	7,505
Hamilton.....	54,861	61,969	Medicine Hat.....	4,247	3,769
Kitchener.....	32,557	33,253	Red Deer.....	7,979	7,023
London.....	50,237	52,846	<b>British Columbia—</b>		
London Township.....	574	1,676	Burnaby District.....	32,462	19,118
Nepean Township.....	22,322	17,294	Richmond Township.....	14,906	28,993
Oshawa.....	28,808	26,602	Surrey District.....	11,269	16,746
Ottawa.....	106,280	106,724	Vancouver.....	78,791	84,006
			Victoria.....	16,997	14,918

<sup>1</sup> Metropolitan Corporation of Greater Winnipeg.

<sup>2</sup> Jasper Place included with Edmonton following annexation.

Table 12 shows the value of building permits issued in 17 metropolitan areas across Canada. In 1965 the permits issued in these areas made up 68 p.c. of the total for Canada.

### 12.—Estimated Value of Building Permits Issued in Metropolitan Areas, 1964 and 1965

Metropolitan Area	1964	1965	Metropolitan Area	1964	1965
	\$'000	\$'000		\$'000	\$'000
St. John's <sup>1</sup> .....	15,834	31,569	Sudbury.....	8,131	12,617
Halifax.....	26,442	43,267	London.....	52,163	56,365
Saint John.....	18,717	10,845	Windsor.....	44,081	54,668
Quebec.....	64,156	86,343	Winnipeg.....	97,158	97,177
Montreal.....	540,017	625,884	Calgary.....	95,969	129,730
Ottawa-Hull.....	147,656	142,035	Edmonton.....	114,167	134,373
Toronto.....	603,335	736,990	Vancouver.....	187,787	215,408
Hamilton.....	91,160	103,227	Victoria.....	36,511	35,047
Kitchener.....	60,785	72,784			

<sup>1</sup> Although this is a metropolitan area, only St. John's proper is included in the building permits survey.



**13.—Value of Building Permits Issued, by Province, 1964 and 1965 with Totals for 1961-65**

NOTE.—Comparable figures from 1952 are given in the corresponding table of previous Year Books beginning with the 1957-58 edition.

Province and Year	Residential Construction			Non-residential Construction			Total
	New	Repair	Total	Industrial	Com- mercial	Institu- tional and Govern- ment	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....1964	8,102	900	9,002	2,186	4,919	5,663	21,770
.....1965	13,255	884	14,139	1,579	11,606	12,776	40,100
Prince Edward Island.....1964	1,631	102	1,733	185	1,120	5,366	8,404
.....1965	1,400	101	1,501	297	1,547	4,473	7,818
Nova Scotia.....1964	25,967	2,218	28,185	23,393	11,701	16,026	79,310
.....1965	27,374	2,734	30,108	14,946	10,037	30,676	85,767
New Brunswick.....1964	17,946	1,863	19,809	5,310	12,913	15,853	53,885
.....1965	18,774	1,828	20,602	28,884	8,612	14,448	72,546
Quebec.....1964	381,535	17,993	399,528	76,334	156,540	156,021	788,423
.....1965	423,759	20,138	443,897	77,247	250,442	127,660	899,246
Ontario.....1964	680,420	26,574	706,994	182,516	240,320	304,253	1,434,083
.....1965	746,010	26,597	772,607	212,291	275,752	400,560	1,661,240
Manitoba.....1964	52,367	2,697	55,064	19,218	21,664	25,442	121,388
.....1965	54,643	2,753	57,396	8,083	31,073	25,655	122,207
Saskatchewan.....1964	58,575	2,876	61,451	7,453	20,348	23,092	112,344
.....1965	65,215	2,089	67,304	8,347	34,599	39,151	149,401
Alberta.....1964	123,578	3,928	127,506	29,611	66,337	65,359	288,813
.....1965	120,209	3,493	123,702	24,881	82,478	117,002	348,063
British Columbia.....1964	195,465	10,087	205,552	34,631	61,674	57,344	359,201
.....1965	215,773	9,740	225,513	53,769	76,699	67,231	423,212
<b>Totals.....1961</b>	<b>1,107,518</b>	<b>68,472</b>	<b>1,175,990</b>	<b>198,110</b>	<b>437,852</b>	<b>432,301</b>	<b>2,244,253</b>
<b>.....1962</b>	<b>1,144,364</b>	<b>64,818</b>	<b>1,209,182</b>	<b>218,133</b>	<b>469,356</b>	<b>619,902</b>	<b>2,516,578</b>
<b>.....1963</b>	<b>1,389,923</b>	<b>72,243</b>	<b>1,462,166</b>	<b>281,048</b>	<b>460,122</b>	<b>619,890</b>	<b>2,823,226</b>
<b>.....1964</b>	<b>1,545,586</b>	<b>69,238</b>	<b>1,614,824</b>	<b>380,842</b>	<b>597,536</b>	<b>674,419</b>	<b>3,267,621</b>
<b>.....1965</b>	<b>1,686,412</b>	<b>70,357</b>	<b>1,756,769</b>	<b>430,324</b>	<b>782,845</b>	<b>839,662</b>	<b>3,809,600</b>

The indexes given in Table 14 show as far as possible the fluctuations in building costs and their effect on construction work and employment. They are designed to measure price changes of the major inputs—material and labour—but do not reflect price variations of other inputs such as engineering fees, architects' fees, construction equipment and profits. The relative proportions of material and wage costs in general building are difficult to determine since such proportions vary with the type of building and the locality. Also, technological progress and changes in productivity might possibly affect the relative importance of the components of these price series.

**14.—Index Numbers of Prices of Building Materials, and Wage Rates and Employment in Construction Industries, 1956-65**

(A.v. 1949=100)

Year	Prices of Building Materials		Wage Rates in Construction Industries	Employment in Building Construction <sup>1</sup>
	Residential	Non- residential		
1956.....	128.5	128.0	152.4	145.5
1957.....	128.4	130.0	162.9	147.7
1958.....	127.3	129.8	173.6	130.1
1959.....	130.0	131.7	183.4	136.5
1960.....	129.2	132.3	195.5	128.6
1961.....	128.3	131.1	199.7	122.5
1962.....	129.7	131.9	209.7	127.7
1963.....	133.9	135.1	214.6	129.1
1964.....	142.5	139.6	224.5	138.2
1965.....	148.9	146.8	235.5	154.1

<sup>1</sup> As reported by employers with 15 or more employees.

### Section 3.—Housing\*

#### Subsection 1.—Government Aid to House-Building

**Federal Assistance.**—The role of the Federal Government in housing has expanded progressively since the introduction of the first continuing statute in 1935. Although the Government originally entered the housing field in 1918, when it made money available to the provinces for re-lending to municipalities for housing purposes, the first general piece of federal housing legislation was the Dominion Housing Act passed in 1935. This was followed by the National Housing Acts of 1938 and 1944, culminating in 1954 with the present National Housing Act, defined as “an Act to promote the construction of new houses, the repair and modernization of existing houses and the improvement of housing and living conditions”. Central Mortgage and Housing Corporation (CMHC), a Crown agency incorporated by Act of Parliament in 1945, administers the National Housing Act and co-ordinates the activities of the Federal Government in housing. The Corporation has the authority and responsibility for a variety of functions affecting housing in its long-term outlook as well as in its immediate requirements. It is empowered to act as an insurer of mortgage loans, as a lender or investor of public funds, as a guarantor and as an owner of property and other assets. It also acts as a research agency in fields associated with housing and assists provinces and municipalities in many aspects of urban growth. In general, the Government, through the successive Housing Acts, has attempted to stimulate and supplement the market for housing rather than assume direct responsibilities that rightfully belong to other levels of government or that could be borne more effectively by private enterprise. In each case the aim has been to increase the flow of mortgage money and to encourage lenders to make loans on more favourable terms to prospective home owners.

The volume of house-building in Canada since 1935 has been spectacular. Close to half of the country's present stock of approximately 5,200,000 houses have been built since the first covering legislation was enacted; about one third of these were financed in one way or another under the Housing Acts.

Under the terms of the National Housing Act, 1954 and its subsequent amendments, the Federal Government is active in many ways.

**Loan Insurance.**—Mortgage loans made by approved lenders may be insured for new home-ownership and rental housing and for existing dwellings in approved urban renewal areas. They are normally available from approved lenders (chartered banks and life insurance, trust and loan companies) to individual home-owner applicants, to builders constructing houses for sale or for rent, to rental investors and to special groups such as co-operative housing associations and farmers. Upon application, the borrower pays CMHC a fee of \$35 per unit to help defray expenses incurred in the examination of plans and specifications, in the determination of lending values and in compliance inspections during construction. An approved lender requires evidence that a home owner or home purchaser is providing 5 p.c. of the value of the house from his own resources. For the home owner this equity may be in the form of cash or a combination of cash, land and labour; for the home purchaser it may be in cash or labour. The regulations require that gross debt service—the ratio of repayments of principal and interest plus municipal taxes

\* Prepared (November 1966) in the Information Division, Central Mortgage and Housing Corporation, Ottawa. Amendments to the National Housing Act made by SC 1966, c. 53, which received Royal Assent on Nov. 22, 1966, are not included in this presentation; see Chap. XXVII, Part V, listing federal legislation of 1966-67.

to the income of the borrower—should not exceed 27 p.c., although instances involving higher ratios may be considered on their merits. The borrower pays an insurance fee which is added to the amount of the loan and is repaid over the term of the mortgage; the fee ranges from  $1\frac{3}{4}$  p.c. to  $2\frac{1}{2}$  p.c. of the loan, according to type of unit and time of mortgage advances.

For home-ownership housing, loans may be up to 95 p.c. of the first \$13,000 of lending value and 70 p.c. of the balance but may not exceed a maximum of \$18,000. Loans for rental houses may be up to 85 p.c. of the lending value, subject to the same maximum loan amount. The maximum loan available for apartment multiple-family dwellings is \$12,000 per family housing unit. The period for loan repayment is usually 25 years but may be extended to 35 years if the lender agrees. Repayments are made in equal monthly instalments which include payment of interest and loan principal. The total monthly payment includes one twelfth of the estimated municipal taxes. The interest rate is prescribed by the Governor in Council; on Jan. 10, 1966, it was increased from  $6\frac{1}{4}$  p.c. to  $6\frac{3}{4}$  p.c.

*Direct Loans.*—CMHC may make direct loans for both home-ownership and rental housing where, in the opinion of the Corporation, loans are not available through approved lenders. Loans are made to any eligible home-owner applicant but direct loans to builders are subject to a requirement that the houses be pre-sold to satisfactory purchasers. Since 1963, loans not subject to pre-sale condition have been made available to support house-building during the winter months. By the end of 1965, direct lending by the Corporation totalled approximately \$2,702,203,000. The amount that may be advanced for this purpose out of the Consolidated Revenue Fund is \$3,250,000,000.

CMHC, with Government approval by Order in Council, may make loans to non-profit corporations and limited-dividend housing companies to assist in financing the construction of low-rental housing projects or in the purchase of existing buildings and their conversion into low-rental housing projects. In addition to self-contained units, developments undertaken by non-profit corporations may include hostel or dormitory accommodation for the elderly and low-income individuals. The dividends of a limited-dividend company are restricted by the terms of its charter to 5 p.c. or less of paid-up share capital. Loans may be up to a maximum of 90 p.c. of the lending value established by CMHC. The period for repayment may not exceed the useful life of the project and in any case may not be for more than 50 years. The interest rate is established by Order in Council. Plans and specifications for such projects must be approved by the Corporation as well as financing and operating arrangements.

Since December 1960, the National Housing Act has provided financial assistance for the elimination or prevention of water and soil pollution. CMHC is authorized to make a loan to a province, municipality or a municipal sewerage corporation for the construction or expansion of a central plant for the treatment and disposal of sewage wastes and the construction of one or more trunk collector sewers. The loan may not exceed two thirds of the cost of the project and the maximum repayment term is 50 years from date of completion. The interest rate is prescribed by the Governor in Council. The agreement covering the project contains a condition whereby 25 p.c. of the loan principal and 25 p.c. of the accrued interest will be forgiven for projects completed to the satisfaction of CMHC on



or before Mar. 31, 1967.\* Where construction is not completed before that date, 25 p.c. of the loan advanced or warrantable by construction progress at that date, plus 25 p.c. of the accrued interest on advances, may be forgiven.

Long-term loans to universities, colleges, co-operative associations and charitable corporations are authorized under the Act for the construction of university housing projects or the acquisition of existing buildings and their conversion into a university housing project. CMHC may lend up to 90 p.c. of the project cost, subject to maximum amounts as follows: houses, \$18,000; self-contained apartments, \$12,000 per unit; and hostels, \$7,000 per person accommodated. Term of the loan may not exceed 50 years. The interest rate is prescribed by the Governor in Council.

*Guarantees.*—CMHC is authorized to give a limited guarantee to banks or approved instalment credit agencies in return for an insurance fee paid by the borrower on loans made for additions, repairs and alterations to existing houses and apartments. A home improvement loan and the balance owing on any existing NHA home improvement loan on the property may not exceed \$4,000 for a one-family dwelling or \$4,000 for the first unit of a duplex, semi-detached or multiple-family dwelling, plus \$1,500 for each additional unit. Loans are repayable in monthly instalments, together with interest at the rate of 6 p.c., in not more than 10 years.

*Public Housing.*—Under the National Housing Act and complementary provincial legislation, the Federal Government and the government of a province may enter into a partnership agreement to build rental housing for families and individuals of low income or purchase and rehabilitate existing housing for this purpose. Projects may include hostel or dormitory accommodation in addition to self-contained units. The Federal Government pays up to 75 p.c. of the capital costs and the provincial government the remainder, although the latter may call upon the municipality concerned to bear a portion of the provincial share. Rents for units in federal-provincial projects are related to the tenant's family income and size of family and operating deficits are shared on the same contractual basis as the capital costs. The Federal Government and the government of a province may also enter into an agreement to provide for a land assembly project which involves the development of raw land for housing purposes. Such projects are financed in the same manner as federal-provincial housing projects.

As an alternative method of producing public housing, the CMHC is empowered to make long-term loans to a province, or to a municipality or public housing agency with the approval of the province, for the provision of housing accommodation. Projects may consist of new construction or existing buildings and include dormitory and hostel accommodation as well as self-contained family units. Loans may be up to 90 p.c. of the total cost as determined by CMHC and for a term as long as 50 years but not in excess of the useful life of the development. The maximum that may be borrowed for a house is \$18,000, for a fully serviced apartment \$12,000, and for hostels or dormitories \$7,000 for each person accommodated. The interest rate is set by the Governor in Council.

Federal grants may be made covering up to 50 p.c. of losses incurred in the operation of public housing projects, for a period of up to 50 years but not exceeding the useful life of the project. Loans may be made to assist proponents of public housing projects to acquire land for future projects, the maximum loan being 90 p.c. of the cost of acquiring and servicing the property.

\* Extended to Mar. 31, 1970 by 1966 amendment to the Act.

*Urban Renewal.*—Federal grants and loans are available under the Act to assist provinces and municipalities undertaking programs of urban renewal. CMHC, with Federal Government approval, may arrange with a municipality to undertake a study to identify blighted areas, determine housing requirements and provide data upon which an orderly program of conservation, rehabilitation and redevelopment can be based. The federal contribution may be as much as 75 p.c. of the cost. The legislation also authorizes federal contributions equal to one half of the costs of preparing an urban renewal scheme setting out proposals for urban renewal action, a similar cost-sharing arrangement for the implementation of a scheme, and loans up to two thirds of the provincial or municipal share of the cost of carrying out an urban renewal scheme. Loans may be for 15 years at an interest rate prescribed by the Governor in Council. To encourage the improvement and conservation of housing meeting minimum standards of construction, loans are available for the sale, purchase or refinancing of existing housing in urban renewal areas not designated for demolition.

*CMHC Building.*—The Corporation may construct and administer housing and certain other buildings on its own account and for other government departments and agencies. Its responsibilities include the provision of architectural and engineering designs, the calling of public tenders and the administration of construction contracts—including any necessary on-site surveying and engineering. On such contracts the Corporation carries out full architectural and engineering inspections.

*Research.*—CMHC is concerned with building technology in the formulation of standards for housing construction, in the use of suitable materials and in the development of new building techniques. The Corporation has no laboratory facilities but has direct experience of performance in the field and seeks the advice of specialists in various agencies and departments of the Federal Government in such matters. Research into the factors affecting housing is concerned with the measurement of the demand for new housing, the volume of new housing built and the supply of mortgage money for house construction. The Corporation also co-ordinates and publishes statistical information on housing. Funds provided under the National Housing Act support the activities of the Canadian Housing Design Council, the Community Planning Association of Canada and the Canadian Council on Urban and Regional Research.

*Other Federal Legislation.*—The Farm Credit Act, 1959 provides for federal long-term loan assistance for housing as well as for other farm purposes (see pp. 460-461); the Veterans' Land Act, 1942 provides a form of loan and grant assistance to veterans for housing and other purposes (see pp. 335-336); and the Farm Improvement Loans Act, 1944 (see pp. 458-459) provides for guarantees for intermediate- and short-term loans made by approved lending agencies to farmers for housing and other purposes. These three statutes are concerned only incidentally with housing.

**Provincial Assistance.**—All provinces have complementary legislation providing for joint federal-provincial housing and land assembly projects and, in addition, most provinces have enacted separate legislation with respect to housing. Details of such assistance may be secured from the provincial government departments listed in the Directory of Sources of Official Information included in Chapter XXVII under the heading of "Housing".

### Subsection 2.—Housing Activities in 1965-66

Housing production in Canada reached a record high in 1965. The 166,565 housing starts represented a slight increase over the 1964 total of 165,658 and completions, numbering 153,037, surpassed the previous year's volume of 150,963 by 1.4 p.c. Investment in new housing amounted to \$2,133,000,000, a gain of 5.2 p.c. over the 1964 total of \$2,028,000,000.

The increase in housing starts took place, as it has since 1962, in apartments and other rental units. Starts of apartment and row dwellings in 1965 reached 83,200 units, representing 50 p.c. of the total and an increase of 4.2 p.c. over the 79,873 units reported during 1964; in the latter year the gain was 25.6 p.c. and in 1963 it was 42.3 p.c. In urban centres, rental dwellings accounted for more than one half of all housing starts for the second successive year.

Starts of dwellings intended primarily for owner-occupancy declined by 2.8 p.c. from 85,785 in 1964 to 83,365 units in 1965. As in the two preceding years, nearly 35 p.c. of the single dwellings were started in the last three months of the year as a result of the Federal Government's winter house-building incentive program and the extended direct lending operations of CMHC. A downward trend, due mainly to a developing shortage of mortgage money, became evident in late 1965 and continued throughout 1966. For the first six months of that year, starts numbered 57,823 compared with 68,510 in the same months of 1965.

#### 15.—Dwelling Units Started and Completed, by Type of Financing, 1956-65 and by Region, 1964 and 1965

(Exclusive of the Yukon and Northwest Territories)

Year and Region	Dwelling Units Started					Dwelling Units Completed
	National Housing Act		Conventional Institutional Loans	All Other Financing	Total	
	CMHC Loans	Approved Lenders Loans				
	No.	No.	No.	No.	No.	No.
1956.....	2,712	40,149	35,687	48,763	127,311	135,700
1957.....	22,321	23,971	32,866	43,172	122,340	117,283
1958.....	35,781	44,533	42,929	41,389	164,632	146,686
1959.....	35,229	26,596	45,198	34,322	141,345	145,671
1960.....	13,788	18,923	40,116	36,031	108,858	123,757
1961.....	23,852	35,334	38,316	28,075	125,577	115,608
1962.....	15,633	31,790	54,214	28,458	130,095	126,682
1963.....	21,213	28,505	71,983	26,923	148,624	128,191
1964.....	28,728	26,118	85,090	25,722	165,658	150,963
1965.....	30,091	24,172	88,669	23,633	166,565	153,037
1964						
Atlantic Provinces.....	836	663	4,440	3,448	9,387	8,100
Quebec.....	8,115	2,569	25,653	6,857	43,194	43,658
Ontario.....	8,822	19,167	31,914	5,714	65,617	57,739
Prairie Provinces.....	8,170	2,772	8,688	6,165	25,795	24,685
British Columbia.....	2,785	947	14,395	3,538	21,665	16,781
1965						
Atlantic Provinces.....	1,071	380	4,027	3,466	8,944	8,953
Quebec.....	9,756	1,958	28,068	4,655	44,437	42,565
Ontario.....	7,938	18,548	34,519	5,762	66,767	56,568
Prairie Provinces.....	7,637	2,167	8,937	6,278	25,019	24,766
British Columbia.....	3,689	1,119	13,118	3,472	21,398	20,185



## 16.—Dwelling Units Started in Metropolitan and Major Urban Areas, 1964 and 1965

Area	Population (Census 1961)	Dwelling Units Started				
		1964	1965			
			Total	Single Detached	Semi- detached and Duplex	Row and Apartment
	'000	No.	No.	No.	No.	No.
<b>Metropolitan Areas—</b>						
Calgary.....	279	3,887	4,178	2,335	366	1,477
Edmonton.....	337	4,479	4,581	2,776	88	1,717
Halifax.....	184	1,688	1,655	422	160	1,073
Hamilton.....	395	5,670	4,519	2,056	40	2,423
Kitchener.....	155	3,173	2,820	1,168	72	1,580
London.....	181	2,668	2,466	1,038	140	1,288
Montreal.....	2,110	27,038	29,182	6,371	1,383	21,428
Ottawa-Hull.....	430	5,711	5,051	1,691	317	3,043
Quebec.....	358	4,257	4,228	2,232	220	1,776
Saint John.....	96	1,011	736	395	94	247
St. John's.....	91	449	556	446	70	40
Sudbury.....	111	271	309	277	2	30
Toronto.....	1,824	28,810	32,506	7,101	1,985	23,420
Vancouver.....	790	12,791	11,684	3,923	172	7,589
Victoria.....	154	2,674	1,610	819	40	751
Windsor.....	193	1,125	1,523	864	8	651
Winnipeg.....	476	4,189	3,898	1,849	220	1,829
<b>Totals, Metropolitan Areas...</b>	<b>8,164</b>	<b>109,891</b>	<b>111,502</b>	<b>35,763</b>	<b>5,377</b>	<b>70,362</b>
<b>Major Urban Areas—</b>						
Brantford.....	57	575	613	342	4	267
Chicoutimi-Jonquière.....	105	434	355	233	16	106
Drummondville.....	39	317	408	206	29	173
Fort William-Port Arthur.....	93	534	525	492	12	21
Guelph.....	42	612	586	295	4	287
Kingston.....	63	785	1,203	459	46	698
Moncton.....	56	492	464	237	24	203
Niagara Falls.....	55	290	292	199	—	93
Oshawa.....	81	1,591	2,164	888	74	1,202
Peterborough.....	50	390	298	226	—	72
Regina.....	112	1,985	1,688	1,055	120	513
St. Catharines.....	95	1,481	1,308	814	20	474
St. Jean.....	35	180	130	64	16	50
Sarnia.....	61	484	565	367	—	198
Saskatoon.....	96	1,526	1,784	915	118	751
Sault Ste. Marie.....	58	616	325	309	2	14
Shawinigan.....	64	134	53	53	8	—
Sherbrooke.....	70	1,017	713	265	86	362
Sydney-Glace Bay.....	106	237	265	211	6	48
Timmins.....	40	82	111	97	8	6
Trois-Rivières.....	84	428	482	391	44	47
Valleyfield.....	30	177	194	134	36	24
<b>Totals, Major Urban Areas...</b>	<b>1,492</b>	<b>14,367</b>	<b>14,534</b>	<b>8,252</b>	<b>673</b>	<b>5,609</b>
All Other.....	8,545	41,400	40,529	31,426	1,874	7,229
<b>Canada<sup>1</sup>.....</b>	<b>18,201</b>	<b>165,658</b>	<b>166,565</b>	<b>75,441</b>	<b>7,924</b>	<b>83,200</b>

<sup>1</sup> Excludes the Yukon and Northwest Territories.

**Operations under the National Housing Act.**—NHA mortgage loans amounting to \$781,575,000 were approved in 1965 for the construction of 59,458 dwellings, compared with loans of \$729,234,000 approved for 58,136 units in 1964. Direct lending by CMHC surpassed the volume of insured loans by approved lenders operating under the Act; loans by the federal agency, involving 33,942 units, had a value of \$461,396,000. As in 1964, the highest level of direct lending by CMHC was reached in the last quarter of the year, when prospective home owners could take advantage of the \$500 bonus payment offered under the Federal Government's winter house-building incentive program.

Loans made available through private lenders in 1965 amounted to \$320,179,000 for 25,516 dwellings. With the approval of loans for 15,974 units, trust companies were the largest source of funds; lending activity by life insurance companies represented 8,529 dwellings. More than 65 p.c. of all the housing started during 1965 was financed by conventional mortgage loans, accounting for 111,723 dwelling starts compared with 110,309 in 1964.

Mortgage money was in plentiful supply during the first half of 1965, as it had been throughout most of the previous year, and in this period starts were 8.3 p.c. above the number for the corresponding months of 1964. However, after July, funds became scarce for some types of loans and were virtually unavailable toward the end of the year. The reduction in the over-all flow of mortgage funds from lending institutions led to more stringent lending terms, including an increase in interest rates. In the first half of 1966, loans were approved for the construction of 20,136 new dwellings compared with 21,733 new dwellings in the same period of 1965, a decrease of 7.6 p.c.

**17.—Mortgage Loans Approved by Lending Institutions, by Type of Property and of Loan, 1956-65**

Year	New Housing		Existing Houses	Other Property	Total
	NHA Loans	Conventional Loans	Conventional Loans	Conventional Loans	
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1956.....	425	255	177	141	998
1957.....	278	239	150	104	771
1958.....	519	291	208	174	1,192
1959.....	308	343	216	216	1,083
1960.....	242	307	221	263	1,033
1961.....	453	333	300	298	1,384
1962.....	412	450	358	311	1,531
1963.....	385	652	430	373	1,840
1964.....	353	812	640	507	2,312
1965.....	320	902	749	581	2,552

*Borrower and House Characteristics.*—Applicants for NHA loans in 1965 had an average income of \$6,655 compared with \$6,375 in 1964. The average income of purchasers who obtained loan assistance through approved lenders operating under the Act was \$7,063 and of those who obtained direct loans from CMHC, \$6,450. The cost of the average NHA-financed house, at \$16,531, was approximately \$700 higher in 1965 than in 1964. Down payments, including any secondary financing, averaged \$2,999 above the \$2,700 average for the previous year. For a large portion of borrowers, the \$500 bonus available under the federal winter house-building incentive program was applied to the down payment requirement. On the average, payments of mortgage principal and interest, together with taxes, represented 21.4 p.c. of the borrower's income, virtually unchanged from 1964. The average age of borrowers was 34.6 years and 58.5 p.c. of the families had one or two children. More than 71 p.c. of the borrowers were purchasing a house for the first time.

Three of every four houses constructed were bungalows, 17 p.c. were split-level dwellings and the remainder were mainly two-storey units. There was a small increase in the size of the average dwelling financed under the NHA—from 1,218 sq. feet in 1964 to 1,226 sq. feet in 1965.

*Loans to Non-profit Corporations and Limited-Dividend Companies.*—In 1965, 56 loans in an aggregate amount of \$14,213,000 were approved to non-profit corporations to assist in the construction of 1,175 self-contained units of low-rental housing and hostel accommodation for 1,293 persons. Of the total, 1,134 units were intended for occupancy by elderly people and 41 by low-income families. In 1964, 44 limited-dividend loans to non-profit housing companies and private entrepreneurs were approved for the construction of 1,861 dwellings.

*Home Improvement Loans.*—There was a slight decline in the volume of NHA-guaranteed bank loans for home improvement purposes in 1965. Loan approvals during the year numbered 18,846 for \$35,589,000 as against 19,800 and a value of \$36,000,000 in 1964. At the end of 1965, the outstanding debt on such loans was reported by the banks at \$73,200,000 compared with \$72,100,000 a year earlier. The Home Improvement Loan Insurance Fund, comprised of fees received from borrowers, increased by \$252,000 during the year to reach \$3,017,000 at Dec. 31, 1965.

*Loans for University Housing Projects.*—Loans totalling \$23,901,000 were approved in 1965 for 22 university housing projects providing accommodation for 4,547 students, a decrease from 1964 activity when assistance was authorized for developments housing 7,377 students. Loans approved in 1965 were distributed provincially as follows:—

Province	Loans		Students to be Accommodated
	No.	\$'000	
Nova Scotia.....	2	991	160
New Brunswick.....	2	1,485	426
Quebec.....	5	4,646	760
Ontario.....	10	16,104	3,020
Alberta.....	1	335	52
British Columbia.....	2	340	129

From December 1960, when university housing loans were first authorized, to December 1965, 116 loans totalling \$137,809,000 were approved for the construction of residences for 26,947 students. In June 1965, the statutory limit that may be advanced for such loans was increased from \$150,000,000 to \$200,000,000.

*Loans for Municipal Sewage-Treatment Projects.*—During 1965, 180 loans amounting to over \$27,337,000 were authorized to assist 162 municipalities to undertake sewage-treatment projects, distributed provincially as follows:—

Province	Loans		Province	Loans	
	No.	\$'000		No.	\$'000
Newfoundland.....	6	562	Ontario.....	52	11,101
Prince Edward Island.....	2	26	Manitoba.....	14	311
Nova Scotia.....	1	72	Saskatchewan.....	32	1,475
New Brunswick.....	5	306	Alberta.....	15	1,560
Quebec.....	44	11,924	British Columbia.....	9	..

From December 1960, when the Act was amended to provide assistance for sewage-treatment projects, to December 1965, 932 loans totalling \$172,285,000 were approved to 677 municipalities.

*Mortgage Marketing.*—Sales of NHA-insured mortgages amounted to \$136,400,000 in 1965 as compared with a 1964 amount of \$150,200,000. The 1965 total included \$80,800,000 in sales through three mortgage auctions held by CMHC to promote the development of a secondary mortgage market. From June 1961, when the first mortgage auction was held by the Corporation, to the end of December 1965, sales by CMHC to members of the Investment Dealers' Association of Canada, NHA-approved lenders and their approved correspondents totalled \$308,600,000. Such sales are subject to the conditions that the mortgages be resold or used as collateral for securities backed by NHA mortgages.

*Urban Renewal.*—Total federal assistance for urban renewal amounted to \$4,134,000 in 1965, compared with \$10,517,000 in 1964. Net contributions estimated at \$3,200,000 were approved for the cities of Saint John, N.B., Montreal, Que., Kingston, Ottawa and Toronto, Ont., Regina, Sask., and Victoria, B.C., for the implementation of urban renewal schemes. Those for Saint John, Kingston and Ottawa will assist in the installation of municipal works and services in projects where federal contributions for acquisition and clearance had been approved under the previous legislation. For the Kingston project, CMHC approved the first loan under a 1964 amendment to the NHA for mortgage loan assistance for existing dwellings in urban renewal areas.



Since 1955, when the urban renewal study legislation was first enacted, 75 studies have been approved in communities large and small across the country. Reports of studies undertaken by Dartmouth, N.S., Joliette, Que., Niagara Falls and Trenton, Ont., Moose Jaw, Sask., and Dawson Creek, B.C., were completed and published in 1965. During that year, more urban renewal study contributions were approved than in any other year. They totalled \$324,470 and included initial grants to the municipalities of Wabana, Nfld., Amherst, Lunenburg, Pictou and Windsor, N.S., Chomedey and Drummondville, Que., Brantford, Fort Frances, Kenora, London, St. Thomas, Timmins and Welland, Ont., Brandon, Man., Estevan, Sask, Lethbridge, Alta., and Chemainus, Natal, New Westminster and Vancouver, B.C. During 1964, five grants totalling \$68,035 were approved for this purpose.

Federal contributions totalling \$610,000 for the preparation of 26 urban renewal schemes were approved during the year, including initial contributions for the municipalities of St. John's and Corner Brook, Nfld., Amherst and Dartmouth, N.S., Moncton and Saint John, N.B., Hull, Montreal and Trois-Rivières, Que., Kitchener, London, Mount Joy, Port Arthur, Sault Ste. Marie, Sudbury and Toronto, Ont., Winnipeg, Man., Calgary and Edmonton, Alta., and Burnaby, B.C.

*Public Housing.*—Approval was given during 1965 for the development under federal-provincial partnership arrangements of public housing projects in St. John's, Nfld., Yarmouth, N.S., and Kingston and Toronto, Ont. These projects will provide a total of 324 dwelling units for low-income families and elderly persons. Since the initial project was authorized in 1950, public housing developments comprising more than 12,500 units have been approved.

Forty-seven loans amounting to \$36,100,000 were approved to Ontario Housing Corporation for loan-assisted public housing projects comprising 2,919 units. Of these, 1,601 were made up of existing units and the remainder, 1,318, through new construction. The annual 50-p.c. federal contribution toward operating losses for the projects is estimated at \$765,000.

*Land Assembly.*—Three land assembly projects were approved under federal-provincial arrangements in 1965. The developments, located at Gander, Nfld., Arnprior, Ont., and Prince Rupert, B.C., will provide a total of 662 serviced building lots. From the inception of the program in 1948 to the end of 1965, a total of 18,929 lots had been authorized for development and 12,043 had been sold.

### Subsection 3.—Housing Statistics of the 1961 Census\*

The tremendous upsurge in building construction in the 1951-61 decade is reflected in the 1961 Housing Census results† which recorded 1,145,198 more occupied dwellings in 1961 than in 1951, the total for Canada in the later year being 4,554,493. The rate of increase in occupied dwellings of 33.6 p.c. exceeded the population increase of 30.2 p.c. in the same period.

Table 18 gives a summary of housing characteristics for Canada in 1951 and 1961. In this period both owned and rented dwellings increased by about one third and single detached dwellings and apartments and flats increased at about the same proportionate rate. The median value of homes was \$11,021 in 1961 and the median monthly cash rent \$62. Almost two out of five dwellings were constructed in the postwar period, a fact reflected in part in the proportion of dwellings in need of repair, which dropped from 13.4 p.c. in 1951 to 5.6 p.c. in 1961.

\* More detailed information may be found in Vol. II (Part 2) of the 1961 Census (Catalogue Nos. 93-523 to 93-535).

† Based on a 20-p.c. sample of occupied dwellings across Canada. A dwelling, for census purposes, is a structurally separate set of living quarters with a private entrance either from outside the building or from a common hall or stairway inside. The entrance must not be through anyone else's living quarters.

## 18.—Housing Characteristics, Censuses of 1951 and 1961

Item	1951 <sup>1</sup>	P.C. of Total	1961	P.C. of Total
<b>Totals, Occupied Dwellings..... No.</b>	<b>3,409,295</b>	<b>100.0</b>	<b>4,554,493</b>	<b>100.0</b>
Tenure—				
Owner-occupied..... No.	2,236,955	65.6	3,005,587	66.0
Tenant-occupied..... “	1,172,340	34.4	1,548,906	34.0
Type—				
Single detached..... No.	2,275,615	66.7	2,978,501	65.4
Apartments, flats..... “	885,565	26.0	1,151,098	25.3
Dwellings by period of construction—				
Before 1920..... No.	..	..	1,391,719	30.6
1920-1945..... “	..	..	1,148,389	25.2
Since 1945..... “	..	..	2,014,385	44.2
Dwellings in need of major repair..... No.	457,570	13.4	255,414	5.6
Av. rooms per dwelling..... No.	5.3	...	5.3	...
Av. bedrooms per dwelling..... “	..	..	2.7	..
Crowded dwellings <sup>2</sup> ..... “	641,820	18.8	750,942	16.5
Median value..... \$	..	..	11,021	...
Dwellings with mortgage <sup>3</sup> ..... No.	394,910	29.3	979,966	45.5
Median monthly cash rent <sup>4</sup> ..... \$	34	...	62	...
Dwellings heated principally by—				
Coal or wood..... No.	2,387,375	70.0	1,062,751	23.3
Oil..... “	774,535	22.7	2,565,416	56.3
Gas..... “	163,165	4.8	857,953	18.8
Dwellings with—				
Steam or hot water furnace..... No.	529,465	15.5	829,984	18.2
Hot air furnace..... “	1,052,570	30.9	2,242,237	49.2
Hot and cold running water..... “	1,939,770	56.9	3,650,115	80.1
Bath or shower..... “	2,072,975	60.8	3,659,520	80.3
Flush toilet..... “	2,328,855	68.3	3,880,512	85.2
Mechanical refrigerator..... “	1,594,980	46.8	4,145,086	91.0
Passenger automobile..... “	1,442,595	42.3	3,114,677	68.4

<sup>1</sup> Exclusive of the Yukon and Northwest Territories.  
<sup>2</sup> Figures relate to owner-occupied, single detached, non-farm dwellings only.

<sup>3</sup> Figures relate to owner-occupied, single detached, non-farm dwellings only.

<sup>4</sup> Figures relate to non-farm dwellings only.

Among the provinces, Alberta had the largest proportionate gain over 1951, recording an increase of 39.5 p.c. and 99,059 dwellings; Ontario was first numerically with 459,625 more dwellings in 1961 than in 1951, an increase of 38.9 p.c. Saskatchewan had the largest proportion of the single detached type in 1961, 85.7 p.c. of its occupied dwellings being in that category. On the other hand, 49 p.c. of Quebec's dwellings were apartments or flats, the highest among the provinces. The largest homes were in Prince Edward Island where they had an average of 6.4 rooms and 3.3 bedrooms. The smallest were in British Columbia and the Prairie Provinces where they averaged 4.9 rooms and 2.4 bedrooms (2.5 bedrooms in Saskatchewan). Crowded homes (those in which the number of persons exceeded the number of rooms) were most in evidence in Newfoundland where about three out of ten were thus classified. The proportion of such homes was lowest in Ontario at 11.8 p.c.

Among the metropolitan areas, Vancouver, Victoria and Windsor had the largest proportion of single detached type dwellings in 1961, with 75.0 p.c. of their homes in that category; 69.8 p.c. of Montreal's dwellings were apartments or flats, the highest proportion for this group. Largest homes, on the average, were found in St. John's, Nfld., where they averaged 5.7 rooms and 3.0 bedrooms, and the smallest were in Sudbury, Ont., where they had an average of 4.6 rooms and 2.3 bedrooms.

Tables showing housing characteristics and tenure of occupied dwellings, by province and metropolitan area, are given in the 1965 Year Book at pp. 710-711.

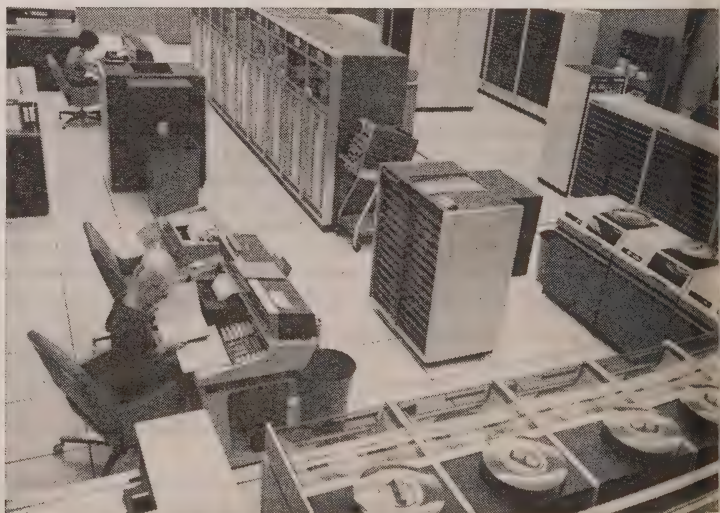




Age-old occupations are undergoing radical change and new occupations are emerging.

The use of heavy machinery and of pre-prepared and prefabricated materials has changed the job of the construction worker and has reduced the size of crew required on any type of construction project, whether building or engineering.

The computer is becoming commonplace in both management and production areas. Keeping a large one busy requires the skills of a variety of specialists—economists, mathematicians, engineers, operations researchers, computer analysts, financial planners and statisticians—as well as of highly trained operators.





# CHAPTER XVIII.—LABOUR\*

## CONSPECTUS

	PAGE		PAGE
SECTION 1. THE GOVERNMENT IN RELATION TO LABOUR.....	731	Subsection 3. Estimates of Employment...	760
Subsection 1. The Federal Department of Labour and the Federal Department of Manpower and Immigration.....	731	Subsection 4. Estimates of Labour Income.	761
Subsection 2. Federal Labour Legislation and Provincial Labour Legislation.....	734	SECTION 4. WAGE RATES, HOURS OF LABOUR AND OTHER WORKING CONDITIONS.....	762
SECTION 2. THE LABOUR FORCE.....	741	SECTION 5. UNEMPLOYMENT INSURANCE.....	767
SECTION 3. EMPLOYMENT STATISTICS.....	746	SECTION 6. EMPLOYMENT INJURIES AND WORKMEN'S COMPENSATION.....	772
Subsection 1. Statistics of Employment, Earnings and Hours.....	746	SECTION 7. ORGANIZED LABOUR IN CANADA...	773
Subsection 2. Earnings and Hours in Manufacturing Industries.....	754	SPECIAL ARTICLE: <b>History of the Labour Movement in Canada</b> .....	773
		SECTION 8. STRIKES AND LOCKOUTS.....	783

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

## Section 1.—The Government in Relation to Labour

### Subsection 1.—The Federal Department of Labour and the Federal Department of Manpower and Immigration

#### The Department of Labour

The federal Department of Labour was established in 1900 under the Conciliation Act which provided machinery to aid in preventing and settling labour disputes and required the Department to collect, compile and publish statistical and other relevant information. The Department also assumed the administration of the Fair Wages Policy adopted in the same year for the protection of workmen employed in the execution of Federal Government contracts and on works aided by grants from public funds. Since that time the Department has been charged with the administration of new legislation and has taken on new functions. Its work fell broadly into two main areas—industrial relations and manpower supply—until Jan. 1, 1966, when all manpower activities were transferred to a new Department of Manpower and Immigration (see p. 732).

The legislation now administered by the Department of Labour in the industrial relations area applies to employers, workers and trade unions under federal jurisdiction. The Department is responsible for conciliation procedures in industrial disputes, the investigation of complaints of unfair labour practices, refusals to bargain and violations of legislation, the processing of applications for the certification and decertification of trade unions and the conducting of representation votes. It determines wage rates and hours of work in Federal Government contracts for construction or supplies, and promotes joint labour-management consultation. It also administers legislation to prevent discrimination in employment based on race, religion, colour or national origin and to provide for equal pay for female employees. In 1965, the Canada Labour (Standards) Code became law. The Code establishes minimum standards of wages, hours of work, vacations with pay and paid general holidays in industries under federal jurisdiction.

\* Except as otherwise noted, this Chapter has been revised under the direction of the Deputy Minister of the Department of Labour, Ottawa.

For the past 20 years, the establishment of labour-management committees in industry has been encouraged and assisted by the Department of Labour through its Labour-Management Co-operation Service—recently reorganized as the Labour-Management Consultation Branch. There are now 2,100 active committees whose efforts are directed to such subjects as improving work methods, safety, operating efficiency, plant maintenance, elimination of waste in labour and materials, maintenance of good morale, promoting educational and training activities and joint consultation on operational changes brought about by technological change.

Research, involving regular and special surveys and analyses of economic and social trends affecting the labour force, is an important part of the Department's work carried out by the Economics and Research Branch. It studies wages and working conditions, union organization, collective bargaining, industrial relations, labour standards and safety. Through the Women's Bureau, it investigates the problems of women in the labour force. It operates a plan of workmen's compensation for seamen on Canadian ships and arranges workmen's compensation for Federal Government employees. In addition to the publication of statistical reports and the results of research studies, the Department publishes the monthly *Labour Gazette*, maintains records of labour legislation in the provinces and in other countries and operates a labour lending library. It provides liaison between the International Labour Organization and the federal and provincial governments and is responsible for the sale and administration of Canadian Government annuities.

### **The Department of Manpower and Immigration\***

This new Department was constituted in June 1966 by the Government Organization Act (SC 1966, c. 25) which was proclaimed effective on Oct. 1, 1966, under the Minister of Manpower and Immigration. It is composed of two operational Divisions—the Canada Immigration Division, the functions of which (transferred from the former Department of Citizenship and Immigration) are outlined in the Immigration and Citizenship Chapter at pp. 216-217, and the Canada Manpower Division, to which were transferred from the Department of Labour the National Employment Service, the Technical and Vocational Training Branch, the Civilian Rehabilitation Branch, the Manpower Consultative Service and parts of the Economics and Research Branch. These operational Divisions are supported by a Program Development Service, and information, financial and administrative, and personnel services. Although the Government organization legislation was not passed until mid-year, the actual transfer took place on Jan. 1, 1966 when reorganization and expansion of the Division functions were begun. Five regional directorates were established to report directly to the Director-General of the Division and staff services were organized into six Branches under an Assistant Director-General.

**Canada Manpower Division.—Manpower Training Branch.**—This Branch continues the training activities formerly conducted by the Department of Labour, including the administration of the federal-provincial Technical and Vocational Training Agreement and the federal-provincial Apprenticeship Training Agreement; these are outlined in the Education Chapter at pp. 346-349. A Training Analysis and Materials Section has been established to prepare occupational and industrial analyses, develop curricula material for the training program supported by the Vocational and Technical Training Act, promote research projects relating to manpower requirements and training in the field, and develop teaching aids.

In the administration of the training program, the Minister has the advice of the National Technical and Vocational Training Advisory Council, the National Advisory Committee on Technological Education and the Industrial Training Committee.

**Vocational Rehabilitation Branch.**—This Branch administers the Disabled Persons Act, 1961, under which the Federal Government shares equally with the participating provinces the costs of vocational rehabilitation services to handicapped persons. Advice

\* Prepared from information provided by the Information Service, Department of Manpower and Immigration.

in this area is given by the National Advisory Council on the Rehabilitation of Disabled Persons, composed of representatives of the medical profession, voluntary agencies, management, organized labour, universities and federal and provincial governments. In co-operation with a sub-committee of the Council, preliminary plans have been made for the development of minimum standards for vocational rehabilitation workshops. Staff-training in this field is conducted by the Branch and federal assistance is given to several provinces for the training of rehabilitation staff. Research projects in rehabilitation are financed by federal funds when conducted by a federal agency and university research projects may be assisted through the University Research Grants Program or on a cost-sharing basis under the Federal-Provincial Vocational Rehabilitation Program. Liaison is maintained with developments in other countries in this field.

The improvement of employment opportunities for mature workers is the function of the Section on Older Workers.

*Employment Stabilization Branch.*—Under the Municipal Winter Works Incentive Program, which is administered by this Branch, the Federal Government provides an incentive to municipalities to undertake public works during the winter by paying a percentage of the direct payroll costs incurred on approved projects. All of the provinces, the Northwest Territories and a number of Indian bands participated in the program during the period Nov. 1, 1965 to Apr. 30, 1966. In general, the Federal Government paid 50 p.c. of the direct payroll costs of the approved projects but municipalities in certain areas of high winter unemployment received 60 p.c. During the 1965-66 period, 6,006 project applications were accepted from 2,516 local authorities, involving direct payroll costs of \$122,288,000. Work was provided on site for an estimated 159,000 men and 8,062,000 man-days. A Government-sponsored Winter Employment Campaign was conducted again during 1965-66, advertised through the newspapers, radio and television as well as through means of other printed matter.

The Supplementary Federal Government Winter Construction Program, introduced in 1963-64, was restricted in 1965-66 to creating more employment in areas of high winter unemployment. Under this program, federal departments bring forward projects that are ready for construction but for which funds have not been provided in current departmental estimates; funds for approved projects are made available under a miscellaneous vote. Projects amounting to \$6,893,000 were approved during 1965-66 to provide 179,000 man-days of work; actual expenditures were \$4,222,513 and the number of man-days provided was 148,694.

*Counselling Services Branch.*—This Branch carries out tasks relating to the adjustment of workers moving into a new environment and persons seeking the opportunity to establish enterprises. It includes sections dealing with Occupational Counselling, Settlement Services, Family Relocation and Special Employment Services.

*Technical Services Branch.*—This new Branch will perform four main functions: develop, implement and co-ordinate policies and techniques relating to occupational identification, description and classification, and job analysis and specification; develop psychological, aptitude and achievement tests for use in counselling and selection of persons for jobs; develop policies and techniques for use in the selection of workers in large-scale operations; and set up computer index systems to facilitate the matching of workers' skills and job requirements, the clearance of job orders and the transmission and reporting of data on the operations of the Manpower Division.

*Operational Services Branch.*—Included in the work of this Branch is the operation of the Manpower Consultative Service which continues to provide technical, consultative and financial assistance to management and labour, to assist in the development of constructive solutions to manpower problems created by technological and economic changes in industry, to stimulate and encourage advance planning by management for such changes in manpower, and to persuade labour to become involved in the assessment of the changes that may be required and the best method of providing for them. For such programs, the



Service adopts a research approach and, as an encouragement, offers to pay 50 p.c. of the costs involved in making studies. It also provides mobility assistance to employees displaced by industrial change. During 1966, work continued on ten programs of manpower assessment and four Manpower Assessment Incentive Agreements and one Mobility Agreement were approved. In all regions, preliminary planning was under way to meet the anticipated labour needs of primary industries.

In 1965-66, a total of 12,029 persons in the administrative, professional and technical categories were placed in employment, an increase of more than 13 p.c. over 1964-65. Somewhat less than half of this total were graduating students and an additional 15,788 students were placed in summer and part-time employment by centres of placement and career planning at institutions of higher education. Nineteen new centres of placement and career planning were established during the year.

*Canada Manpower Centres.*—The 250 local offices of the former National Employment Service were renamed Canada Manpower Centres on Oct. 1, 1966. The new name reflects more accurately the emphasis being placed on counselling, training, labour force mobility, up-grading, research, and labour market information. Rapid technological change, with attendant manpower supply problems, is the reason for broadening the responsibilities of the employment service. Its previous role was confined largely to placement operations. A more decentralized operation and improved staff and facilities will enable the Canada Manpower Centres to become the key operational agency in the Division's manpower planning and policies.

**Program Development Service.**—This Service was formed as a part of the new Department of Manpower and Immigration in the latter part of the year ended Mar. 31, 1966. It consists of five Branches: Research, Planning and Evaluation, Manpower Information and Analysis, Pilot Projects, and Legislation and Legal (supplied by the Department of Justice). The basic purpose of the Service is to assist the two operating Divisions of the Department in evaluating existing programs and developing new or revising existing programs so as to ensure the most effective means of supporting departmental policy both in the field and in the headquarters offices of the Department. Specifically, the Program Development Service has the responsibility for departmental functions related to research, statistical services, manpower information and labour market analysis, experimental projects, and legislation.

## **Subsection 2.—Federal Labour Legislation and Provincial Labour Legislation**

### **Federal Labour Legislation**

**Fair Wages Policy.**—The Fair Wages Policy applying to all Federal Government contracts was first set forth in a Resolution of the House of Commons (1900) and later incorporated in an Order in Council and amended from time to time. Wages and hours on contracts for construction are now regulated by the Fair Wages and Hours of Labour Act (RSC 1952, c. 108) and Order in Council PC 1954-2029 of Dec. 22, 1954. Hours of work on construction contracts are limited to eight a day and 44 a week, except in an emergency approved by the Minister or in special circumstances where exemption is granted by Order in Council; wages to be paid are those current for the type of work in the district or, if there are no current rates, fair and reasonable rates as determined by the Minister of Labour. An Act to amend the Fair Wages and Hours of Labour Act was passed by Parliament and received Royal Assent on June 16, 1966. This amendment will, on a date to be proclaimed by the Governor in Council, make it a condition of Federal Government construction contracts that \$1.25 an hour will be the minimum rate to be paid for work on such contracts regardless of the prevailing standards, and will adopt 40 hours as a regular work week rather than 44. Contractors will be able to work employees up to 48 hours a week without a permit as long as the overtime rate of time-and-one-half is paid after 40 hours.

Wages and hours of work on contracts for equipment and supplies are also regulated by Order in Council PC 1954-2029. The hours of such work must be those fixed by the

custom of the trade in the district where the work is performed, or fair and reasonable hours. The wages must be current or fair and reasonable but in no event shall they be less than those established by statute or regulation of the province in which the work is being performed. This Order in Council contains a clause prohibiting discrimination against any person in matters of employment because of that person's race, national origin, colour or religion, or because he has made a complaint or given information with respect to such alleged discrimination.

**Government Prevailing Rate Employees.\***—Many departments and agencies of government employ non-office workers in public buildings, defence establishments, parks and forests, experimental farms, canal operation, airports and government vessels, survey parties, special projects, etc. Rates of pay for such positions are fixed by the Treasury Board in consultation with the Department of Labour on the basis of prevailing private industry rates for comparable work in the appropriate area. Data used in the determination of these pay rates are secured from wage surveys made by Industrial Relations Officers of the Department of Labour, from wage research conducted by the Economics and Research Branch, and from collective agreements and wage rates established under the legislation of some provinces. The Labour Standards Branch provides wage data to assist certain Crown corporations in the preparation of their wage schedules, and gives assistance in the establishment of class titles, job descriptions and the application of job evaluation techniques.

Three sets of comprehensive Regulations have been established by the Treasury Board governing hours of work, overtime, vacations, statutory holidays, sick leave, pensions, etc., for (1) prevailing rate workers generally employed, (2) ships' officers and (3) ships' crews.

**The Industrial Relations and Disputes Investigation Act.**—This legislation came into effect by proclamation on Sept. 1, 1948, revoking the Wartime Labour Relations Regulations in effect since March 1944 and repealing the Industrial Disputes Investigation Act which had been in force from 1907 until suspended by the Wartime Regulations in 1944. The Act protects proceedings commenced and decisions, orders and certifications made under the wartime legislation in so far as these involve services authorized by the Act.

The Act applies only to industries within federal jurisdiction, viz., navigation, shipping, interprovincial railways, canals, telegraphs, steamship lines and ferries, both international and interprovincial, aerodromes and air transportation, radio broadcasting stations, and works declared by Parliament to be for the general advantage of Canada or of two or more provinces. However, the Act provides that provincial authorities if they so desire may enact similar legislation for application to employees within provincial jurisdiction and make mutually satisfactory arrangements with the Federal Government for the administration of such legislation by the federal authorities.

In general, the Act in its important features provides that employees and employers shall have the right to organize and bargain collectively and that trade unions may be certified as bargaining agents for employee groups. Trade unions and employers are required, upon notice, to bargain collectively in good faith. The Act provides for invoking collective bargaining negotiations and for the mediation of conciliation officers and conciliation boards in reaching collective agreements. Employees may change bargaining agents at times under conditions specified in the Act, which also prescribes conditions affecting the duration and renewal of collective agreements. Collective agreements are required to contain provision for the arbitration of disputes concerning the meaning or violation of such agreements and where such provision is lacking application may be made for its establishment. The Act prohibits unfair labour practices, i.e., the interference with or domination of trade unions by employers or interference, discrimination and coercion in trade union activity. The conditions that must be observed prior to strike and lockout action are set down

\* Statistics on numbers and earnings of prevailing rate and other groups of federal employees which were exempt from the Civil Service Act are given at pp. 156-161; this Act was replaced by the Public Service Employees Act (SC 1966-67, c. 71) passed by the House of Commons Feb. 20, 1967, the provisions of which are extended to cover prevailing rate employees and ships' officers and crews.



in the Act. Industrial inquiry commissions may be appointed to investigate industrial matters or disputes. The Minister of Labour is charged with the administration of the Act and is directly responsible for the provisions affecting the appointment of conciliation officers, conciliation boards, industrial inquiry commissions, consent to prosecute, and complaints that the Act has been violated or that a party has failed to bargain in good faith.

The Canada Labour Relations Board administers provisions concerning the certification of bargaining agents, the writing of a procedure into a collective agreement for the final settlement of disputes concerning the meaning or violation of such agreement, and the investigation of complaints made to the Minister that a party has failed to bargain collectively.

Detailed statistics concerning activities under the Act may be found in the Annual Report of the Department of Labour. In brief, from Sept. 1, 1948 to Dec. 31, 1965, the Canada Labour Relations Board received 1,766 applications for certification, 1,012 of which were granted, 363 rejected, 359 withdrawn and 32 were pending at the end of the period. Of the 1,165 industrial disputes dealt with under the conciliation provisions of the Act, 1,017 were settled by conciliation officers and conciliation boards, 77 were not settled, 33 lapsed and 38 were pending at Dec. 31, 1965.

**Reinstatement in Civil Employment Act.**—This Act provides for the reinstatement in their civil employment of discharged members of the Armed Forces and other designated persons. It was originally passed in 1942, revised in 1946, and broadened in its application in 1954.

**Canada Fair Employment Practices Act.**—This Act, which came into effect on July 1, 1953, prohibits discrimination in employment based on race, colour, religion or national origin. It applies only to industries within federal jurisdiction—those covered by the Industrial Relations and Disputes Investigation Act (see p. 735). This law prohibits acts of discrimination by employers; discrimination by trade unions in regard to membership or employment; the use by employers of employment agencies that practise discrimination; and the use of advertisements or inquiries in connection with employment that express, directly or indirectly, any limitation, specification or preference as to race, colour, religion or national origin.

**Female Employees Equal Pay Act.**—This Act came into effect on Oct. 1, 1956 and applies to employers and employees engaged in works, undertakings or businesses coming within federal jurisdiction. The Act, in its principal provision, prohibits an employer from employing a female for any work at a rate of pay that is less than the rate at which a male is employed by that employer for identical or substantially identical work.

**Canada Labour (Standards) Code.**—This Act received Royal Assent on Mar. 18, 1965 when the administration and general provisions of Part V came into effect. The Act provides, in Parts I to IV which came into force on July 1, 1965, minimum standards with respect to hours of work, minimum wages, annual vacations and general holidays in industries under federal jurisdiction; the Annual Vacations Act 1958 was repealed.

The standard hours of work are eight a day and 40 a week, with maximum hours of 48 a week. Overtime pay at not less than time-and-one-half is required for all hours worked in excess of the standard hours. Permits are required in order to work more than 48 hours a week. Where the nature of the work necessitates irregular distribution of hours of work, the hours may be averaged over a period of two weeks or more.

The minimum wage is \$1.25 an hour for all persons 17 years of age or over and the minimum wage for persons under 17 years of age is \$1.00 an hour. Special rates may be set for persons receiving training on-the-job and for any person who has a disability which is a handicap in the performance of work to be done.

Employees are entitled to a two-week vacation with pay after one year of employment, with vacation pay calculated at 4 p.c. of wages. The general holidays are eight in number and every employee is entitled to a holiday with pay on each of them, or substitutes for them.



The Code has special and transitional provisions. Any person may make a submission (under Sect. 51) for deferment or suspension of Part I (Hours of Work). The Minister may grant deferment or suspension where it can be shown that the application of Part I is or would be prejudicial to the interests of the employees or detrimental to the operation of the business. The Minister's order to defer or suspend may be for a period up to but not exceeding 18 months from the date of the order, and the order may or may not contain conditions on hours.

A further deferment or suspension may be made by the Governor in Council, but only after there has been an inquiry, and the order of the Governor in Council must contain conditions on hours of work. Where a business is organized and operated in a local area, the Act provides for the making of a submission (under Sect. 52) for deferment of Sect. 11 (Minimum Wages) but the submission must have been made before July 1, 1965. The Minister may grant the deferment where it can be shown that the application of the minimum wages would be prejudicial to the interests of the employees or detrimental to the operation of the business. The deferment order may not extend beyond Jan. 1, 1967 and shall specify the minimum rate of wages that shall be paid during the period of deferment.

All submissions under Sects. 51 and 52 pending on July 1, 1965 may be listed in the *Canada Gazette*, and this action stays the operation of Part I (Hours of Work) and Sect. 11 (Minimum Wages) until the Minister has rejected the submission or has made an order under Sect. 51 or 52.

Regulations have been enacted to carry out the purposes of the Code. Among other things they provide, where there is irregular distribution of hours of work, that the standard hours and maximum hours of work may be averaged over a period of 13 weeks or fewer without Ministerial approval, and over a longer period with Ministerial approval.

## Provincial Labour Legislation

Because of the authority given by the British North America Act to the provincial legislatures to make laws in relation to local works and undertakings and in relation to property and civil rights in the province, power to enact labour legislation is largely the prerogative of the provinces. Since it imposes conditions on the rights of the employer and employee to enter into a contract of employment, labour legislation is, generally speaking, law in relation to civil rights. Under this authority, the provincial legislatures have enacted a large body of legislation affecting the employment relationship in such fields as working hours, minimum wages, the physical conditions of workplaces, apprenticeship and training, wage payment and wage collection, labour-management relations, workmen's compensation and other matters. In each province a Department of Labour is charged with the administration of labour laws. Legislation for the protection of miners is administered by departments dealing with mines. The workmen's compensation law in each province is administered by a Workmen's Compensation Board appointed by the Lieutenant-Governor in Council.

**Minimum Wages.**—As a means of ensuring adequate living standards for workers, all provinces have enacted minimum wage legislation. These laws vest in a minimum-wage-fixing board authority to set or recommend minimum wages for employees. In most provinces minimum wage orders now cover almost all employment except farm labour and domestic service. In Prince Edward Island, however, the only classes of female workers for which minimum rates have been set are restaurant and laundry workers.

Minimum rates set by the orders apply throughout the provinces except in Nova Scotia, Quebec and Saskatchewan. Nova Scotia is divided into three zones for minimum wage-setting purposes; in Quebec there are two zones. In Saskatchewan minimum rates vary between urban and rural areas. Except in Newfoundland, Nova Scotia and Prince Edward Island, the same rates are set for both sexes. The New Brunswick orders are made

on an industry basis but together provide general coverage for most employees in the province. The British Columbia board issues a separate order for each industry or occupation. In the other provinces, minimum wage boards issue general orders, supplemented by special orders in some cases.

**Hours of Work.**—Five provinces have general hours-of-work laws. Those of Ontario, Alberta and British Columbia set limits on hours of work. Hours are limited in Alberta and British Columbia to eight a day and 44 a week, and in Ontario to eight a day and 48 a week. The Manitoba and Saskatchewan Acts regulate hours through the requirement that one and one half times the regular rate must be paid if work is continued after specified limits. The Manitoba law requires payment of the overtime rate after eight and 48 hours for men and eight and 44 hours for women. The Saskatchewan Act requires payment of the overtime rate after eight and 44 hours. Some exceptions are provided for in all five Acts. Hours of work are regulated for particular classes of workers or for some industries in all provinces under other legislation.

**Regulation of Wages and Hours in Certain Industries.**—Industrial standards legislation is in effect in Newfoundland, Nova Scotia, New Brunswick, Ontario, Saskatchewan and Alberta. These laws provide that a schedule of wage rates and hours of work agreed upon by a representative group of employees and employers in an industry or trade may, upon approval by the government, be given statutory effect by Order in Council, and so become the minimum terms of employment for the entire industry or trade in the area. An advisory committee, usually equally representative of employers and employees, is established to assist in enforcing a schedule. This legislation is used fairly extensively in the building trades, the clothing industries, barbering and a few other industries. In Newfoundland, Nova Scotia and New Brunswick schedules have been issued only for certain construction trades in some areas. In Ontario, schedules for the garment trades, the fur industry and the hard furniture industry apply throughout the province and a substantial number of schedules apply to various construction trades and to barbering in specified areas.

Under the Quebec Collective Agreement Act, certain terms of a collective agreement, including those dealing with hours and wages, may be made binding on all employers and employees in the industry concerned in a defined area, provided the parties to the agreement represent a sufficient proportion of the industry. The standards made binding under this procedure are contained in a decree, which has the force of law. Approximately 100 decrees applying to construction, manufacturing, barbering and hairdressing, commercial establishments, and other industries and services are in effect, covering close to 250,000 employees. Of these decrees, 15 apply throughout the province.

The Construction Industry Wages Act in Manitoba provides for the setting of minimum rates of wages and maximum hours of work at regular rates for employees in the construction industry, on the recommendations of a board equally representative of employers and employees, with a public member as chairman. Under this Act, annual schedules set the regular work week and hourly rates of wages for various classifications of workers in the heavy construction industry, the Greater Winnipeg building construction industry, and in rural building construction.

**Annual Vacations and Public Holidays.**—All provinces except Newfoundland and Prince Edward Island have annual vacations legislation applicable to most industries. In Nova Scotia, New Brunswick and Quebec, workers are entitled to a vacation with pay of one week after a year of service; in Ontario, workers are entitled to a vacation of one week after each of the first three years of employment, and of two weeks after the fourth and each subsequent year. In the four western provinces, the annual paid vacation required by law is two weeks and, in Saskatchewan, three weeks after five years service.

The Provinces of Alberta, British Columbia, Manitoba, Nova Scotia and Saskatchewan have enacted legislation of general application dealing with public holidays. The number of holidays named varies from five to eight, and the provisions for payment also vary.

**Anti-discrimination Laws.**—Eight provinces have adopted fair employment practices laws forbidding discrimination in hiring and conditions of employment and in trade union membership on grounds of race, colour, religion or national origin. In addition, in British Columbia and Ontario, discrimination in employment and trade union membership on grounds of age is prohibited. Eight provinces have equal pay laws that forbid discrimination in rates of pay solely on the basis of sex, and the Quebec statute respecting discrimination in employment forbids discrimination in employment on the basis of sex.

**Accident Prevention and Workmen's Compensation.**—Factory or industrial safety Acts in most provinces establish safeguards for the protection of the health and safety of workers in factories and other workplaces with respect to such matters as sanitation, heating, lighting, ventilation and the guarding of dangerous machinery. Long-established laws regulating the design, construction, installation and operation of mechanical equipment, such as boilers and pressure vessels, elevators and lifts and electrical installations, have been revised in recent years in line with technological changes, and legal standards have been set in new fields involving hazards to workers and the public, such as the use of gas- and oil-burning equipment. This legislation also prescribes standards of qualification for workers who install, operate or service such equipment. Laws requiring safety standards to be observed in construction and excavation work are in force in most provinces.

Workmen's compensation legislation providing a system of collective liability on the part of employers for accidents occurring to employees in the course of their employment are in force in all provinces. Workmen's compensation laws are described in greater detail on pp. 772-773.

**Labour Relations.**—In all provinces, there is legislation similar in principle to the federal Industrial Relations and Disputes Investigation Act, designed to establish equitable relations between employers and employees and to facilitate the settlement of industrial disputes. These laws guarantee freedom of association and the right to organize, establish machinery (labour relations boards) for the certification of a trade union as the exclusive bargaining agent of an appropriate unit of employees, and require an employer to bargain with the certified trade union representing his employees. Except in Saskatchewan, they require the parties to comply with the conciliation procedures laid down in the Act before a strike or lockout may legally take place, and they provide also that every collective agreement must contain provision for the settlement of disputes arising out of the agreement, and prohibit strikes and lockouts while an agreement is in effect. All prohibit defined unfair labour practices and prescribe penalties.

In most provinces, certain classes of employees who are engaged in essential services, such as policemen and firemen, are forbidden to strike and, in lieu of the right to strike, have recourse to final and binding arbitration. There are special provisions requiring arbitration of hospital disputes in five provinces.

**Certification of Qualified Tradesmen.**—All provinces have apprenticeship laws providing for an organized procedure of on-the-job training and school instruction in designated skilled trades, and statutory provision is made in most provinces for the issue of certificates of qualification, on application, to qualified tradesmen in certain trades. In some provinces, legislation is in effect making it mandatory for certain classes of tradesmen to hold a certificate of competency.

**Changes in 1965-66.**—Significant developments in provincial labour legislation in the years 1965 and 1966 are described below.

**Minimum Wages.**—General minimum wage rates were increased in seven provinces. Manitoba and Alberta also removed the differentials in the minimum rates between rural and urban areas. In Nova Scotia, minimum rates were fixed for male workers for the first time. The minimum rates now in effect for experienced workers in certain cities are shown in Table 1.



## 1.—Minimum Wage Rates for Experienced Workers in Certain Cities, by Sex, Dec. 1, 1966

Item, Type of Establishment and Sex	St. John's, Nfld.	Charlottetown, P.E.I.	Halifax, N.S.	Saint John, N.B.	Montreal, Que.	Toronto, Ont.	Winnipeg, Man.	Regina, Sask.	Edmonton, Alta.	Vancouver, B.C.
Maximum hours per week to which the rates apply.	M. 48 <sup>1</sup> F. 48 <sup>1</sup>	— 48	48 48	48 48	48 <sup>2</sup> 48 <sup>2</sup>	48 48	48 44	44 44	44 44	40 <sup>3</sup> 40 <sup>3</sup>
	\$ per hour	\$ per hour	\$ per hour	\$ per hour	\$ per hour	\$ per hour	\$ per hour	\$ per week	\$ per hour	\$ per hour
Factories.....	M. 0.70 F. 0.50	1.10 <sup>4</sup> —	1.10 0.85	0.90 0.90	1.00 1.00	1.00 1.00	1.00 1.00	40.00 40.00	1.00 1.00	1.00 1.00
Laundries.....	M. 0.70 F. 0.50	1.10 0.55	1.10 0.85	0.80 0.80	1.00 1.00	1.00 1.00	1.00 1.00	40.00 40.00	1.00 1.00	1.00 1.00
Shops.....	M. 0.70 F. 0.50	1.10 —	1.10 0.85	0.90 0.90	1.00 1.00	1.00 1.00	1.00 1.00	40.00 40.00	1.00 1.00	1.00 1.00
Hotels and restaurants	M. 0.70 F. 0.50	1.10 21.00 <sup>6</sup>	1.10 0.85	0.80 0.80	0.64 <sup>5</sup> 0.64	1.00 1.00	1.00 1.00	40.00 40.00	1.00 1.00	1.00 1.00
Beauty parlours.....	M. 0.70 F. 0.50	1.10 —	0.85 0.85	0.80 0.80	1.00 1.00	1.00 1.00	1.00 1.00	40.00 40.00	1.00 1.00	35.00 <sup>7</sup> 35.00 <sup>7</sup>
Theatres and amusement places.	M. 0.70 F. 0.50	1.10 —	1.10 0.85	0.80 0.80	1.00 1.00	1.00 1.00	1.00 1.00	40.00 40.00	1.00 1.00	0.75 0.75
Offices.....	M. 0.70 F. 0.50	1.10 —	1.10 0.85	0.80 0.80	1.00 1.00	1.00 1.00	1.00 1.00	40.00 40.00	1.00 1.00	1.00 1.00

<sup>1</sup> 40 hours in shops.<sup>2</sup> In hotels and restaurants the rates apply to a maximum of 54 hours in a week.<sup>3</sup> In beauty parlours, theatres and amusement places the rates apply to a maximum of 44 hours in a week.<sup>4</sup> 90 cents per hour for male workers in food processing plants.<sup>5</sup> Chauffeurs, watchmen, stationary enginemen and firemen 70 cents; bell boys 56 cents.<sup>6</sup> Dollars per week for waitresses; \$16 for other restaurant workers.<sup>7</sup> Dollars per week.

**Hours of Work.**—In Alberta, the 44-hour week in effect in centres with a population of more than 5,000 was extended to all parts of the province, effective from Jan. 1, 1966. In Manitoba, the statutory overtime requirement (one and one half times the employee's regular rate for all time worked in excess of eight hours in the day and 44 hours in the week for women, and eight hours in the day and 48 hours in the week for men) was extended to all industries subject to the Act in all parts of the province. Prior to the amendment, the statutory overtime standard applied only to employment listed in a schedule and to the industrialized areas of the province.

**Annual Vacations and Public Holidays.**—The annual vacations legislation in Ontario was amended to increase to two weeks the length of the vacation for an employee with more than three years service. In Manitoba, provision was made for payment of vacation pay on termination of employment during a working year. Orders were issued under the Alberta Labour Act requiring employers to give their employees five paid public holidays a year, and providing for the payment of a lump sum to construction workers in lieu of public holidays. In Saskatchewan, also, orders were issued adopting a percentage payment in lieu of pay for eight public holidays for workers in the construction and logging and lumbering industries. In British Columbia, legislation was passed to authorize the Board of Industrial Relations to require employers to give their employees eight public holidays with pay.

**Maternity Protection.**—British Columbia passed a new Maternity Protection Act applying to all types of employment except farming, horticultural operations and domestic service. The Act provides for six weeks of leave of absence during pregnancy and six weeks after childbirth, or longer with a medical certificate, and protects a woman from dismissal while absent on maternity leave up to a period of 16 weeks.

**Anti-discrimination Measures.**—Two provinces enacted anti-discrimination laws. Alberta adopted a Human Rights Act prohibiting discrimination in employment, in trade union membership, and in public accommodation on grounds of race, religious beliefs, colour, ancestry or place of origin. Ontario passed the Age Discrimination Act, 1966,

making Ontario the second province, after British Columbia, to ban discrimination in employment on grounds of age. The Alberta Act binds the Crown and its agencies. An amendment in Ontario in 1965 also brought the provincial government and its agencies under the Human Rights Code.

*Industrial Safety.*—The major change was the complete revision and up-dating of the industrial safety legislation of three provinces—Manitoba, Nova Scotia and British Columbia. All three laws were broadened in scope. The Manitoba and Nova Scotia Acts contain general principles and authorize the setting of detailed safety standards by regulation. The new legislation in British Columbia sets general standards for the working environment in such matters as hygiene and the welfare and comfort of employees. The general Accident Prevention Regulations under the British Columbia Workmen's Compensation Act, which constitute the province's safety code, were also revised. In New Brunswick and Ontario, the first detailed regulations under general industrial safety Acts passed in 1964 came into effect in 1965. The Ontario Loggers' Safety Act was proclaimed in force and regulations were issued under it.

Steps were taken through a revision of regulations in some provinces to strengthen safety standards governing construction, grain elevators and passenger and freight elevators.

*Workmen's Compensation.*—Benefits under workmen's compensation laws were increased in most provinces. Five provinces increased the maximum yearly earnings on which compensation may be paid. The principle of adjusting pensions to the cost of living in line with increases in the Consumer Price Index was introduced in the British Columbia legislation. Compulsory coverage of farm workers was introduced in Ontario.

*Labour Relations.*—Developments in labour relations legislation related in the main to groups which were brought under collective bargaining legislation for the first time or which had only recently become organized for bargaining purposes. The Ontario Hospital Labour Disputes Arbitration Act was enacted to prohibit strikes and lockouts in disputes involving hospital employees and to provide for the settlement of such disputes by arbitration. In the general field of public service, a new Civil Service Act was enacted in Quebec, which gave public servants employed by the province the right to bargain collectively with the government regarding salary and other conditions of employment and the right to strike, provided essential services were maintained. These changes and somewhat similar changes in the law in Manitoba and Alberta have led to collective agreements between the government of those provinces and their employees. Special provisions for teachers were added to the Quebec Labour Code, placing delays upon strike action but not prohibiting it. Amendments in Nova Scotia brought employees of provincial boards and commissions under the Trade Union Act.

A number of changes were also made in the general labour relations law of several provinces. In Ontario and Manitoba, amendments to dispute settlement provisions were designed to encourage the use of a mediator selected by the parties to a dispute as an alternative to the use of conciliation boards. The jurisdiction of the Ontario Labour Relations Board was extended to cover disputes over work assignments and the Manitoba Labour Board was given authority to deal with unfair labour practice complaints.

*Apprenticeship.*—Nova Scotia replaced its Apprenticeship and Tradesmen's Qualification Act and six provinces designated new trades for the purpose of apprenticeship training.

## Section 2.—The Labour Force\*

Since 1946, reliable information for analysis of employment in Canada, at the national level and for the five major regions, has been provided through a labour force survey. Between November 1945 and November 1952, quarterly surveys were undertaken and, thereafter, the survey has been carried out on a monthly basis. The sample used in the survey has been designed to represent all persons in the population, 14 years of age or over, residing in Canada, with the exception of residents of the Yukon and Northwest Territories, Indians

\* Prepared in the Special Surveys Division, Dominion Bureau of Statistics.

living on reserves, inmates of institutions and members of the Armed Forces. Interviews are carried out in approximately 35,000 households chosen by area sampling methods across the country.\*

In the labour force survey persons are classified on the basis of their activity during the week prior to the survey interview week. This week is called the reference week. The main divisions in the classification are:—

**Labour Force.**—The civilian labour force is composed of that portion of the civilian non-institutional population, 14 years of age or over who, during the reference week, were employed or unemployed.

**Employed.**—The employed include all persons who, during the reference week: (a) did any work for pay or profit; (b) did any work which contributed to the running of a farm or business operated by a related member of the household; (c) had a job, but were not at work, because of bad weather, illness, industrial dispute or vacation, or because they were taking time off for other reasons. Persons who had jobs but did not work during the reference week and who also looked for work are included in the unemployed as persons without work and seeking work.

**Unemployed.**—The unemployed includes all persons, who, through the reference week: (a) were without work and seeking work, i.e., did no work during the reference week and were looking for work; or would have been looking for work except that they were temporarily ill, were on indefinite or prolonged layoff, or believed no suitable work was available in the community; (b) were temporarily laid off for the full week, i.e., were waiting to be called back to a job from which they had been laid off for less than 30 days.

**Not in the Labour Force.**—Those not in the labour force include all civilians 14 years of age or over (exclusive of institutional population) who are not classified as employed or unemployed. This category includes those: going to school; keeping house; too old or otherwise unable to work; and voluntarily idle or retired. Housewives, students and others who worked part-time are classified as employed, or if they looked for work as unemployed.

The estimates derived from the labour force survey, which are based on a sample of households, are subject to sampling error. Somewhat different figures might be obtained if a complete census were taken. This difference is called the sampling error of the estimates. In the design and processing of the labour force survey extensive efforts are made to minimize the sampling error; in general, the percentage of error tends to decrease as the size of the estimate increases. A statistical measure of the sampling error can be found in DBS monthly publication *The Labour Force* (Catalogue No. 71-001).

\* A comprehensive description of the survey is given in DBS publication *Canadian Labour Force Survey—Methodology* (Catalogue No. 71-504).

## 2.—Estimates of the Civilian Labour Force and its Main Components, Annual Averages, 1946 and 1956-65

NOTE.—Comparable figures for 1947-55 are given in the 1962 Year Book, p. 708. Figures do not include inmates of institutions and Indians on reservations.

Year	Civilian Population (14 years of age or over)	Civilian Labour Force (14 years of age or over)						Persons not in the Labour Force (14 years of age or over)	
		Employed				Unem- ployed	Total Labour Force		
		Non-agriculture			Agri- culture				Total (em- ployed)
		Paid Workers	Other	Total (non-agri- culture)					
	'000	'000	'000	'000	'000	'000	'000	'000	
1946 <sup>1</sup> .....	8,779	2,990	490	3,480	1,186	4,666	163	4,829	3,950
1956.....	10,807	4,286	522	4,808	777	5,585	197	5,782	5,025
1957.....	11,123	4,442	540	4,983	748	5,721	278	6,008	5,115
1958.....	11,288	4,461	527	4,988	718	5,706	432	6,137	5,255
1959.....	11,605	4,624	546	5,170	700	5,870	372	6,242	5,363
1960.....	11,831	4,732	551	5,282	683	5,965	446	6,411	5,420
1961.....	12,053	4,799	575	5,374	681	6,055	466	6,521	5,521
1962.....	12,280	4,980	585	5,565	660	6,225	390	6,615	5,665
1963.....	12,536	5,138	588	5,726	649	6,375	374	6,748	5,787
1964.....	12,817	5,368	611	5,979	630	6,609	324	6,933	5,884
1965.....	13,128	5,655	613	6,268	594	6,862	280	7,141	5,986

<sup>1</sup> Excludes Newfoundland.



**Characteristics of the Civilian Labour Force, 1946-65.**—The civilian non-institutional population averaged 13,128,000 in 1965 compared with 8,779,000 in 1946, an increase of 49.5 p.c., and during the same period the labour force increased 47.9 p.c. to 7,141,000. As a result, the proportion of the population 14 years of age or over in the labour force declined somewhat from 55.0 p.c. to 54.4 p.c. during the period. Underlying this slight decline was a decrease in the proportion of males in the labour force and a partially offsetting increase in the proportion of females in the labour force. Such factors as changes in the age composition of the population, an increase in the number of young people deferring their entry into the labour force by remaining longer in school and a greater tendency for workers to retire from the labour force at an earlier age contributed to the decline in the male labour force participation rate from 85.1 p.c. to 77.9 p.c. between 1946 and 1965. Although these factors also influenced females, they were more than compensated by the increase in the proportion of married women in the labour force. For example, between 1959 and 1964 the labour force participation rate of married females increased from 18.0 p.c. to 24.2 p.c. In 1965 married women constituted 51.7 p.c. of the female labour force and the proportion of the female population in the labour force increased from 23.4 p.c. in 1953 to 31.3 p.c. in 1965. The tendency for a greater proportion of married women to enter the labour force was also reflected in the labour force participation rates of females 25-44 and 45-64 years of age. During the 1953-65 period, the proportion of 25-44-year-old females in the labour force rose from 23.1 p.c. to 32.6 p.c. and for the 45-64-year-olds the proportion increased from 17.2 p.c. to 32.9 p.c.

Greater job opportunities for women, particularly in the service industries, facilitated the increase in the female labour force participation rate. In 1946, the goods-producing industries and the service-producing industries accounted for about 60 p.c. and 40 p.c., respectively, of total employment; by 1965 these proportions had changed to 43 p.c. and 57 p.c., respectively. Some notable shifts in the distribution of employment also took place within these broad industry groupings. In 1946, almost one in four employed persons worked in agriculture but by 1965 the ratio had declined to less than one in ten. Between 1946 and 1965, a slight decline occurred in the proportion of persons employed in manufacturing industries but the proportion employed in trade, in finance, insurance and real estate, and in service industries increased substantially.

Paralleling the shifts in the distribution of employment among industries was a change in the occupational mix. A greater increase occurred in the number of white-collar occupations than in the number of blue-collar jobs in the postwar period, reflecting the changing composition of final output and also the introduction of new methods of production. Table 5 shows that increases occurred in the proportions of persons employed in the managerial, the professional and technical, the clerical and the service occupational groups in the 1948-65 period. On the other hand, agricultural occupations, in which approximately 22.5 p.c. of all employed persons worked in 1948, accounted for only 8.7 p.c. of employed persons in 1965. Small declines also occurred in the proportions of employed persons working in the fishing, logging, trapping and mining occupational group, in the manufacturing and mechanical group and in the transportation group.

During the 1946-65 period, total employment increased 47.1 p.c. to 6,862,000; the number of men employed rose 34.2 p.c. to 4,842,000 and the number of females 91.1 p.c. to 2,020,000. On an annual average basis, unemployment as a percentage of the labour force fluctuated widely during the period, ranging between 2.2 p.c. in 1947 and 7.1 p.c. in 1961; it averaged 3.9 p.c. in 1965. Throughout this period, unemployment rates were substantially lower for women than for men.

Persons not in the labour force averaged 5,986,000 in 1965 compared with 3,950,000 in 1946, an increase of 51.5 p.c. Housewives and students together accounted for over 80 p.c. of the 1965 total.

### 3.—Percentage Distribution of the Population 14 Years of Age or Over in the Labour Force and Non-labour Force Categories, by Sex, 1946 and 1956-65

NOTE.—Comparable figures for 1947-55 are given in the 1962 Year Book, pp. 710-711.

Year	Popu- lation (14 years of age or over)	Percentage Distribution of the Population 14 Years of Age or Over							
		Labour Force				Not in Labour Force			
		Employed		Unem- ployed	Total	Women Keeping House	Persons Going to School	Other	Total
		Agri- culture	Non- agri- culture						
MALES									
	'000	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1946 <sup>1</sup> .....	4,400	23.4	58.6	3.1	85.1	...	5.5	9.4	14.8
1956.....	5,398	13.7	65.4	3.2	82.2	...	6.2	11.6	17.8
1957.....	5,559	12.8	65.1	4.4	82.3	...	6.4	11.4	17.7
1958.....	5,684	11.7	63.3	6.6	81.7	...	6.8	11.6	18.4
1959.....	5,785	11.3	64.2	5.6	81.0	...	7.2	11.7	19.0
1960.....	5,890	10.7	63.4	6.6	80.7	...	7.5	11.7	19.3
1961.....	5,991	10.4	62.7	6.7	79.8	...	8.1	12.1	20.2
1962.....	6,094	9.8	63.8	5.4	79.1	...	8.6	12.3	20.9
1963.....	6,215	9.3	64.2	5.0	78.5	...	9.0	12.5	21.5
1964.....	6,351	8.8	65.1	4.2	78.1	...	9.5	12.4	21.9
1965.....	6,505	8.0	66.4	3.4	77.9	...	9.9	12.3	22.1
FEMALES									
	'000	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1946 <sup>1</sup> .....	4,379	3.6	20.6	0.6	24.7	63.2	5.1	7.0	75.3
1956.....	5,409	0.7	23.7	0.5	24.9	64.9	5.5	4.7	75.1
1957.....	5,564	0.7	24.5	0.6	25.8	63.9	5.7	4.5	74.2
1958.....	5,703	0.9	24.4	0.9	26.2	63.2	6.1	4.5	73.8
1959.....	5,820	0.8	25.1	0.8	26.7	62.4	6.4	4.5	73.3
1960.....	5,942	0.8	26.0	1.0	27.9	61.0	6.6	4.5	72.1
1961.....	6,061	1.0	26.6	1.1	28.7	59.9	6.9	4.5	71.3
1962.....	6,186	1.0	27.1	1.0	29.0	59.1	7.4	4.5	71.0
1963.....	6,320	1.1	27.5	1.0	29.6	58.1	7.9	4.4	70.4
1964.....	6,466	1.1	28.5	0.9	30.5	56.9	8.3	4.3	69.5
1965.....	6,623	1.1	29.4	0.8	31.3	55.6	8.6	4.5	68.7

<sup>1</sup> Excludes Newfoundland.

### 4.—Percentage Distribution of the Employed by Industrial Group, 1946 and 1956-65

NOTE.—Comparable figures for 1947-55 are given in the 1962 Year Book, p. 711.

Year	Total Em- ployed	Percentage Distribution							
		Agri- culture	Other Primary Industries	Manu- facturing	Con- struction	Trans- portation and Other Utilities	Trade	Finance, Insurance and Real Estate	Service <sup>1</sup>
	'000	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1946 <sup>2,3</sup> .....	4,666	25.4	4.0	26.0	4.8	8.1	12.3	2.7	16.8
1956 <sup>3</sup> .....	5,585	13.9	4.6	25.7	7.4	9.0	15.8	3.5	20.3
1957 <sup>3</sup> .....	5,731	13.0	4.3	26.1	7.7	8.9	15.7	3.6	20.8
1958 <sup>3</sup> .....	5,706	12.5	3.7	25.6	7.5	8.9	16.0	3.7	22.1
1959 <sup>3</sup> .....	5,870	11.8	3.4	25.5	7.5	8.9	16.2	3.7	23.0
1960 <sup>3</sup> .....	5,965	11.3	3.5	24.7	7.0	8.6	16.5	3.8	24.6
1961 <sup>3</sup> .....	6,055	11.1	3.0	25.0	6.7	8.4	16.3	4.0	25.5
1961 <sup>4</sup> .....	6,055	11.2	3.0	24.0	6.2	9.3	16.9	3.9	25.3
1962 <sup>4</sup> .....	6,225	10.6	2.9	24.1	6.3	9.4	16.9	4.0	25.8
1963 <sup>4</sup> .....	6,375	10.2	2.8	24.3	6.4	9.4	16.7	4.0	26.3
1964 <sup>4</sup> .....	6,609	9.5	3.0	25.0	6.2	8.9	16.7	4.0	26.7
1965 <sup>4</sup> .....	6,862	8.7	3.4	23.8	6.7	9.0	16.7	4.1	27.6

<sup>1</sup> Includes public administration and defence, to the 1948 standard industrial classification.

<sup>2</sup> Excludes Newfoundland.

<sup>3</sup> Classified according to the 1948 standard industrial classification.

<sup>4</sup> Classified according to the 1960 standard industrial classification.

## 5.—Percentage Distribution of the Employed by Major Occupational Group, 1948-65

Year	All Occupations Annual Average	Managerial	Professional and Technical	Clerical	Sales <sup>1</sup>	Service and Recreation
	No.	p.c.	p.c.	p.c.	p.c.	p.c.
1948 <sup>2,3</sup>	4,875	6.1	5.9	10.2	8.4	7.4
1949 <sup>2,3</sup>	4,913	7.8	6.0	10.4	7.3	7.6
1950 <sup>3</sup>	4,876	8.2	6.4	10.9	7.0	8.2
1951 <sup>3</sup>	5,097	8.3	6.4	11.4	7.3	7.9
1952 <sup>3</sup>	5,159	8.9	6.5	11.5	7.4	8.7
1953 <sup>3</sup>	5,235	9.1	7.1	11.3	7.4	8.5
1954 <sup>3</sup>	5,243	8.7	7.3	11.6	7.6	8.9
1955 <sup>3</sup>	5,364	8.4	7.6	11.7	7.7	8.8
1956 <sup>3</sup>	5,585	8.3	7.6	12.2	7.6	9.1
1957 <sup>3</sup>	5,731	8.7	8.4	12.3	7.8	9.2
1958 <sup>3</sup>	5,706	8.8	8.8	12.6	7.9	9.7
1959 <sup>3</sup>	5,870	8.9	9.3	12.6	8.3	9.8
1960 <sup>3</sup>	5,965	8.7	9.7	12.8	8.3	10.2
1961 <sup>3</sup>	6,055	9.1	9.8	13.1	8.4	10.9
1961 <sup>4</sup>	6,055	9.1	9.9	13.3	7.4	10.9
1962 <sup>4</sup>	6,225	9.3	10.6	13.3	7.3	10.9
1963 <sup>4</sup>	6,375	9.2	10.6	13.4	7.2	11.1
1964 <sup>4</sup>	6,609	9.2	10.6	13.4	7.4	11.7
1965 <sup>4</sup>	6,862	9.3	11.4	13.4	7.0	11.6
	Transport	Communication	Farmers and Farm Workers	Fishermen, Trappers, Loggers and Miners	Craftsmen, Production Process and Related Workers <sup>5</sup>	Labourers and Unskilled Workers
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1948 <sup>2,3</sup>	7.0	1.4	22.5	3.3	23.9	4.0
1949 <sup>2,3</sup>	7.0	1.4	22.0	2.9	24.5	3.1
1950 <sup>3</sup>	6.7	1.4	20.6	3.2	24.9	2.6
1951 <sup>3</sup>	6.7	1.4	18.5	3.5	23.9	4.7
1952 <sup>3</sup>	6.8	1.4	17.3	3.2	23.2	5.2
1953 <sup>3</sup>	6.8	1.5	16.5	2.8	23.6	5.5
1954 <sup>3</sup>	6.5	1.5	16.9	3.1	22.7	5.4
1955 <sup>3</sup>	6.7	1.5	15.4	3.3	22.9	6.0
1956 <sup>3</sup>	6.7	1.4	14.0	3.3	23.3	6.4
1957 <sup>3</sup>	6.5	1.5	13.1	3.0	23.6	5.9
1958 <sup>3</sup>	6.5	1.6	12.5	2.6	23.2	5.8
1959 <sup>3</sup>	6.4	1.5	11.9	2.4	23.1	5.9
1960 <sup>3</sup>	6.4	1.4	11.4	2.5	22.8	5.7
1961 <sup>3</sup>	6.3	1.4	11.2	2.1	22.3	5.4
1961 <sup>4</sup>	5.8	0.9	11.3	2.1	24.2	5.0
1962 <sup>4</sup>	5.6	0.9	10.6	1.9	24.7	4.8
1963 <sup>4</sup>	5.6	0.9	10.3	1.9	24.9	4.8
1964 <sup>4</sup>	5.6	0.8	9.6	2.1	24.6	4.9
1965 <sup>4</sup>	5.4	0.9	8.7	2.2	25.2	4.9

<sup>1</sup> Includes commercial and financial occupations.<sup>2</sup> Excludes Newfoundland.<sup>3</sup> Classified according

to the 1951 occupational classification, using 1961 occupational classification terminology.

<sup>4</sup> Classified according to the 1961 occupational classification.<sup>5</sup> Includes manufacturing and mechanical and construction occupations.

Several changes in the regional distribution of the Canadian labour force occurred between 1946 and 1965. The proportion in the Prairie Province region declined from about 20 p.c. to 17 p.c., there were small increases in the proportions in Quebec, Ontario and British Columbia, and the Atlantic region's share remained unchanged. Employment was substantially higher in 1965 than in 1946 in all regions. In British Columbia it increased 63.8 p.c., in Ontario 54.1 p.c., in Quebec 49.0 p.c., in the Prairie Provinces 26.3 p.c., and in the Atlantic region (excluding Newfoundland) 14.3 p.c.

There was an uneven regional distribution of unemployed persons in 1965. The Atlantic region, which contained only 8.6 p.c. of the total labour force, accounted for 16.1 p.c. of the unemployed, and Quebec, which contained 28.3 p.c. of the labour force, accounted for 38.9 p.c. of the unemployed. Conversely, Ontario and the Prairie Provinces, with



36.6 p.c. and 17.2 p.c., respectively, of the labour force, accounted for only 23.6 p.c. and 11.1 p.c., respectively, of the unemployed. British Columbia had 9.3 p.c. of the labour force and 10.0 p.c. of the unemployed. This uneven distribution of unemployed persons, which also prevailed in 1946, was reflected in the regional unemployment rates. The annual average unemployment rate in 1965 was 7.4 in the Atlantic region, 5.4 in Quebec, 2.5 in Ontario, 2.5 in the Prairie Province region, and 4.2 in British Columbia.

#### 6.—Estimates of Employment and Unemployment, by Region, 1946 and 1956-65

NOTE.—Comparable figures for 1947-55 are given in the 1962 Year Book, p. 712.

Year	Atlantic		Quebec		Ontario		Prairies		British Columbia	
	Employment	Unemployment	Employment	Unemployment	Employment	Unemployment	Employment	Unemployment	Employment	Unemployment
	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000
1946 <sup>1</sup>	392	23	1,283	54	1,654	48	947	21	390	16
1956..	489	31	1,535	80	2,096	51	976	22	489	14
1957..	492	45	1,576	101	2,161	77	992	27	509	27
1958..	469	67	1,582	153	2,142	122	1,013	43	501	47
1959..	482	59	1,620	138	2,198	103	1,049	35	521	36
1960..	492	59	1,639	164	2,249	128	1,069	47	516	48
1961..	507	64	1,652	168	2,269	132	1,100	53	527	49
1962..	516	62	1,713	139	2,317	105	1,129	46	551	39
1963..	522	55	1,762	142	2,382	94	1,138	44	571	39
1964..	542	46	1,827	124	2,473	83	1,162	37	605	34
1965..	566	45	1,912	109	2,548	66	1,196	31	639	28

<sup>1</sup> Excludes Newfoundland.

### Section 3.—Employment Statistics\*

#### Subsection 1.—Statistics of Employment, Earnings and Hours

Monthly records of employment have been collected from larger business establishments since 1921. At that time a survey was instituted to provide employment index numbers which would serve as current economic indicators. In 1941 the survey was extended to provide information on payrolls and per capita wages and salaries and in 1944 it was further extended to provide data on hours of work and hourly and weekly wages. Also during the war period, separate records for men and women employees were established. Beginning with the January 1966 publications of *Employment and Average Weekly Wages and Salaries* and *Man-Hours and Hourly Earnings*, the data compiled are on a revised basis. A historical series (Catalogue No. 72-504) provides, on the revised basis, monthly and annual data from 1961-65 and will be extended to provide data from 1957 to this period. The revision has involved the publishing of employment indexes on the time base 1961=100 in place of the time base 1949=100. All data are compiled on the 1960 standard industrial classification instead of the 1948 standard industrial classification. The new establishment concept of reporting has been introduced with the result that, in a number of cases, activities formerly reported separately are now consolidated into operating entities capable of reporting all elements of basic industrial statistics, including employment and payrolls.

Statistics below the provincial level are compiled for many urban areas using the census definition for metropolitan areas and modified definitions for other urban areas. The survey at present covers establishments with 20 or more employees in any month of the current period rather than, as formerly stated, "those usually having 15 or more employees". The data in Tables 7-14 are presented according to the revised series.

The survey now covers sectors of the following major industry divisions: forestry; mining (including milling); manufacturing; construction; transportation, communication and other utilities; trade; and finance, insurance and real estate. Also included are

\* Prepared in the Employment Section, Labour Division, Dominion Bureau of Statistics.

certain branches of the service industry, mainly hotels and restaurants, laundries and dry-cleaning plants, and recreational and business services. The survey excludes agriculture, public administration and community services such as health and education. The coverage corresponds closely, therefore, to the business sector of the economy. Since the survey does not cover small firms and excludes several industries, the employment records are published in the form of index numbers (1961=100).

The monthly employment statistics relate to the number of employees drawing pay in the last pay period in the month. Data are requested for all classes of employees with the exception of homeworkers and casual employees working less than one day in the pay period. Owners and firm members are also excluded. The respondents report the gross wages and salaries paid in the last pay period in the month, before deductions are made for income tax, unemployment insurance, etc. The reported payrolls represent gross remuneration for services rendered and paid absences in the period specified, including salaries, commissions, piece-work and time-work payments, and such items as shift premiums and regularly paid production, and incentive and cost-of-living bonuses. The statistics on hours relate to the straight and overtime hours worked by those wage-earners for whom records of hours are maintained, and also to hours credited to wage-earners absent on paid leave during the reported period. If the reported period exceeds one week, the payroll and hours data are reduced to weekly equivalents.

**Employment.**—Table 7 shows that, over the five-year period 1961-65, the industrial composite index of employment rose by 14.3 p.c.; service increased by 25.8 p.c., construction by 19.7 p.c., manufacturing by 17.2 p.c., finance, insurance and real estate by 16.6 p.c. and trade by 14.5 p.c. The increase in manufacturing was particularly significant in view of the fact that this industry accounts for over 35 p.c. of industrial employment as measured by the employment survey. Mining, forestry and transportation, communication and other utilities showed some improvement during 1965, particularly mining, although these industries have been operating at reduced levels of employment in recent years.

#### 7.—Annual Average Index Numbers of Employment by Industrial Division, 1961-65, and Monthly Indexes 1965

NOTE.—These indexes are calculated as at the last pay period of each month, on the base 1961=100.

Year and Month	Forestry	Mining (incl. milling)	Manufacturing	Construction	Transportation, Communication and Other Utilities	Trade	Finance, Insurance and Real Estate	Service <sup>1</sup>	Industrial Composite
<b>Averages—</b>									
1961.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1962.....	99.5	99.4	103.8	101.8	99.4	101.2	103.2	101.7	102.2
1963.....	96.9	97.9	105.1	100.9	100.1	103.5	107.6	106.1	104.4
1964.....	102.8	98.8	111.1	105.8	101.5	108.1	111.9	114.7	108.2
1965.....	104.2	105.1	117.2	119.7	103.9	114.5	116.6	125.8	114.3
<b>1965—</b>									
January.....	93.7	99.5	111.7	96.1	97.7	108.3	114.1	115.0	107.2
February.....	85.6	100.5	111.9	94.6	98.1	108.4	114.7	116.1	107.2
March.....	74.7	102.0	113.5	97.1	99.1	109.3	115.0	118.1	108.4
April.....	62.6	100.1	113.7	104.1	100.6	111.3	115.0	121.0	109.4
May.....	91.8	104.9	116.4	118.9	103.5	112.4	116.0	125.3	113.2
June.....	119.3	108.7	119.2	128.6	106.1	116.1	116.1	130.0	116.7
July.....	130.5	110.5	118.5	124.7	108.6	118.1	118.1	133.1	117.7
August.....	130.4	110.1	120.6	139.3	109.5	117.8	117.8	135.3	119.7
September.....	123.3	107.1	121.1	138.2	107.8	117.6	117.6	131.0	119.1
October.....	118.6	105.9	120.6	138.5	106.2	118.0	118.0	129.2	118.6
November.....	116.8	105.5	120.6	131.5	106.1	118.4	118.4	129.1	118.7
December....	102.1	105.1	118.5	114.6	103.4	117.9	117.9	126.8	115.9

<sup>1</sup> Consists mainly of hotels, restaurants, laundries, dry-cleaning establishments and recreational and business services.

# 8.—Annual Average Index Numbers of Employment, by Industrial Division and Group, 1961-65

NOTE.—These indexes refer to the last week of each month and are on the base 1961=100.

Industry	1961	1962	1963	1964	1965
<b>Forestry</b> .....	<b>100.0</b>	<b>99.5</b>	<b>96.9</b>	<b>102.8</b>	<b>104.2</b>
<b>Mining (incl. milling)</b> .....	<b>100.0</b>	<b>99.4</b>	<b>97.9</b>	<b>98.8</b>	<b>105.1</b>
Metals.....	100.0	99.4	96.1	96.9	103.2
Gold.....	100.0	96.3	92.9	88.1	81.0
Copper-gold-silver.....	100.0	100.5	101.8	101.9	109.6
Nickel-copper.....	100.0	99.4	89.1	95.6	108.3
Iron.....	100.0	111.4	113.3	119.8	139.8
Mineral fuels.....	100.0	99.6	99.0	97.5	100.5
Coal.....	100.0	95.0	93.9	89.0	91.3
Petroleum and gas wells.....	100.0	103.9	104.0	106.0	109.7
Non-metals (except fuels).....	100.0	102.3	105.3	104.7	106.7
Asbestos.....	100.0	102.0	100.7	97.4	95.9
<b>Manufacturing</b> .....	<b>100.0</b>	<b>103.8</b>	<b>106.1</b>	<b>111.1</b>	<b>117.2</b>
Durable goods.....	100.0	105.9	109.5	116.7	126.0
Non-durable goods.....	100.0	102.1	103.4	106.6	110.1
Foods and beverages.....	100.0	101.5	101.3	103.3	106.6
Slaughtering and meat processing.....	100.0	98.4	98.8	100.7	104.2
Dairy products.....	100.0	99.0	99.5	102.1	105.1
Fish products.....	100.0	107.9	107.5	107.6	117.3
Fruit and vegetable processing.....	100.0	111.1	108.0	112.9	118.4
Grain mill products.....	100.0	99.8	96.1	96.7	94.9
Biscuits.....	100.0	101.9	100.5	102.5	103.8
Bakeries.....	100.0	99.7	99.0	100.1	102.2
Confectionery.....	100.0	103.0	105.4	104.8	110.9
Soft drinks.....	100.0	102.5	104.6	108.3	110.0
Distilleries.....	100.0	96.8	95.0	96.1	98.6
Breweries.....	100.0	96.9	97.0	99.0	98.9
Tobacco processing and products.....	100.0	105.0	104.0	102.0	99.2
Rubber products.....	100.0	104.3	107.7	113.3	117.4
Leather products.....	100.0	102.2	101.7	102.4	101.7
Shoes (except rubber).....	100.0	101.6	100.1	98.2	96.0
Luggage, handbag and small leather goods.....	100.0	106.2	112.2	121.2	126.3
Textile products.....	100.0	104.4	109.3	115.8	120.1
Cotton yarn and cloth.....	100.0	103.1	102.6	106.9	106.1
Woollen yarn and cloth.....	100.0	104.2	109.8	112.8	111.7
Synthetic textiles.....	100.0	104.9	114.8	127.1	136.3
Knitting mills.....	100.0	103.0	103.2	106.3	111.5
Hosiery.....	100.0	101.4	98.9	98.6	101.2
Other knitting mills.....	100.0	104.3	105.6	110.8	117.9
Clothing.....	100.0	101.7	104.4	109.9	112.5
Men's clothing.....	100.0	104.6	108.4	113.9	118.5
Women's clothing.....	100.0	100.1	102.3	110.2	113.3
Wood products.....	100.0	104.3	107.4	111.2	113.4
Saw, shingle and planing mills.....	100.0	102.5	105.2	109.2	111.6
Furniture and fixtures.....	100.0	106.3	108.4	113.1	122.8
Household furniture.....	100.0	107.9	108.8	116.1	126.5
Paper and allied industries.....	100.0	102.1	103.2	106.8	111.1
Pulp and paper mills.....	100.0	100.7	101.2	104.9	108.6
Printing, publishing and allied industries.....	100.0	101.8	101.6	101.4	105.4
Commercial printing.....	100.0	101.3	101.0	102.9	105.3
Printing and publishing.....	100.0	101.5	102.1	99.4	105.2
Primary metal industries.....	100.0	102.2	104.9	112.3	118.7
Iron and steel mills.....	100.0	106.5	112.9	121.9	129.6
Iron foundries.....	100.0	105.4	112.3	119.0	131.9
Smelting and refining.....	100.0	95.9	93.6	99.8	105.5
Metal fabricating industries.....	100.0	106.6	108.9	114.5	125.7
Fabricated structural metals.....	100.0	105.8	96.6	99.7	119.2
Ornamental and architectural metals.....	100.0	109.9	112.4	119.3	125.2
Metal stamping, pressing and coating.....	100.0	107.5	112.5	119.1	128.7
Wire and wire products.....	100.0	104.8	110.0	120.3	132.3
Hardware, tools and cutlery.....	100.0	109.4	117.4	128.6	149.5
Heating equipment.....	100.0	105.0	104.7	105.2	107.1
Miscellaneous metal fabricating.....	100.0	107.2	111.5	118.8	127.1
Machinery (except electrical).....	100.0	106.4	114.8	121.4	137.1
Agricultural implements.....	100.0	96.8	111.6	114.8	133.8
Miscellaneous machinery and equipment.....	100.0	109.6	117.0	126.0	142.1
Office and store machinery.....	100.0	106.0	111.5	112.0	124.6
Transportation equipment.....	100.0	106.5	117.7	124.2	137.5
Aircraft and parts.....	100.0	96.0	88.4	96.8	93.4
Motor vehicle manufacturers.....	100.0	108.1	123.3	141.7	163.7



### 8.—Annual Average Index Numbers of Employment, by Industrial Division and Group, 1961-65—concluded

Industry	1961	1962	1963	1964	1965
<b>Manufacturing—concluded</b>					
Transportation equipment—concluded					
Motor vehicle parts and accessories.....	100.0	106.3	119.2	138.9	157.9
Shipbuilding and repair.....	100.0	121.2	123.7	118.4	128.5
Electrical products.....	100.0	109.9	114.5	119.4	128.1
Major appliances (incl. non-electric).....	100.0	103.2	105.3	114.7	119.8
Household radios and televisions.....	100.0	114.7	120.1	129.3	144.7
Communications equipment.....	100.0	115.5	118.9	121.8	130.2
Non-metallic mineral products.....	100.0	105.7	108.3	113.1	121.3
Concrete products.....	100.0	113.4	114.4	124.3	143.1
Clay products.....	100.0	105.3	102.2	105.3	118.6
Glass and glass products.....	100.0	101.9	109.1	111.9	110.0
Petroleum and coal products.....	100.0	98.8	96.6	97.0	105.2
Petroleum refineries.....	100.0	96.5	92.9	91.8	89.6
Chemicals and chemical products.....	100.0	100.4	102.0	105.5	111.1
Pharmaceuticals and medicines.....	100.0	102.2	103.8	107.7	112.9
Paints and varnishes.....	100.0	99.3	97.1	98.5	92.5
Soap and cleaning compounds.....	100.0	106.1	106.4	104.6	104.1
Industrial chemicals.....	100.0	97.7	102.0	106.1	111.5
Miscellaneous manufacturing industries.....	100.0	107.2	110.8	117.1	121.5
<b>Construction.....</b>	<b>100.0</b>	<b>101.8</b>	<b>100.9</b>	<b>105.8</b>	<b>119.7</b>
Building.....	100.0	102.4	101.0	105.2	120.5
General contractors.....	100.0	99.9	96.6	100.5	114.7
Special trade contractors.....	100.0	105.3	106.0	110.6	127.0
Engineering.....	100.0	101.4	100.8	106.6	118.0
Highways, bridges and streets.....	100.0	99.8	95.8	107.5	115.9
Other engineering.....	100.0	103.0	106.0	105.8	120.2
<b>Transportation, Communication and Other Utilities...</b>	<b>100.0</b>	<b>99.4</b>	<b>100.1</b>	<b>101.5</b>	<b>103.9</b>
Transportation.....	100.0	98.6	98.1	99.3	101.3
Air transport and services.....	100.0	101.1	98.3	100.8	104.2
Water transport and services.....	100.0	99.7	100.2	102.7	105.2
Railway transport.....	100.0	97.6	95.6	96.5	96.1
Maintenance of equipment.....	100.0	99.2	97.0	101.3	101.9
Maintenance of way and structures.....	100.0	93.9	91.9	91.5	85.5
Railway transportation.....	100.0	98.4	96.4	96.5	97.8
Truck transport.....	100.0	97.8	103.7	108.2	118.2
Bus transport, interurban and rural.....	100.0	94.3	95.7	97.7	102.5
Urban transit.....	100.0	98.5	99.1	99.4	110.0
Highway and bridge maintenance.....	100.0	98.7	96.8	97.4	98.7
Storage.....	100.0	96.2	99.1	104.4	115.6
Grain elevators.....	100.0	95.3	98.5	103.8	104.9
Other storage and warehousing.....	100.0	100.2	101.4	106.8	114.5
Communication.....	100.0	101.2	103.4	105.5	108.9
Radio and television broadcasting.....	100.0	103.3	105.0	108.7	111.6
Telephone.....	100.0	100.7	103.8	106.1	110.9
Telegraph and cable.....	100.0	100.9	99.0	97.4	96.4
Post office.....	100.0	101.8	103.5	105.5	107.9
Electric power, gas and water.....	100.0	103.9	105.5	106.3	108.6
Electric power.....	100.0	103.2	104.1	105.0	107.4
Gas distribution.....	100.0	109.6	112.9	111.5	112.6
<b>Trade.....</b>	<b>100.0</b>	<b>101.2</b>	<b>103.5</b>	<b>108.1</b>	<b>114.5</b>
Wholesale.....	100.0	101.1	102.4	105.4	110.8
Retail.....	100.0	101.7	104.4	109.6	116.2
Food stores.....	100.0	101.5	104.9	112.3	117.5
Department stores.....	100.0	100.8	104.8	110.2	115.5
Variety stores.....	100.0	98.0	98.3	105.2	118.7
Automotive product stores.....	100.0	102.9	107.5	113.7	124.7
<b>Finance, Insurance and Real Estate.....</b>	<b>100.0</b>	<b>103.2</b>	<b>107.6</b>	<b>111.9</b>	<b>116.6</b>
Financial institutions.....	100.0	103.4	108.4	113.6	120.0
Insurance and real estate.....	100.0	102.3	105.8	108.8	111.5
Insurance carriers.....	100.0	102.0	105.0	107.4	109.6
<b>Service.....</b>	<b>100.0</b>	<b>101.7</b>	<b>106.1</b>	<b>114.7</b>	<b>125.8</b>
Recreational services.....	100.0	100.9	104.5	109.6	116.9
Business services.....	100.0	103.1	109.0	120.6	137.3
Personal services.....	100.0	100.9	104.9	112.1	120.0
Miscellaneous services.....	100.0	103.0	107.4	118.5	136.9
<b>Industrial Composite.....</b>	<b>100.0</b>	<b>102.2</b>	<b>104.4</b>	<b>108.2</b>	<b>114.3</b>

### 9.—Annual Average Index Numbers of Employment, by Province, 1961-65, and Monthly Indexes 1965

NOTE.—These indexes refer to the last week of each month and are on the base 1961=100.

Year and Month	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada
<b>Averages—</b>											
1961.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1962.....	100.1	105.3	100.4	99.8	101.7	103.0	100.4	100.7	102.0	102.1	102.2
1963.....	102.0	101.8	101.1	100.6	103.0	105.4	101.6	102.4	102.3	104.9	104.4
1964.....	107.6	105.9	103.6	104.6	107.5	110.1	103.4	105.1	106.1	109.4	108.2
1965.....	118.0	112.2	108.6	109.7	112.9	116.5	106.1	110.4	112.6	118.2	114.3
<b>1965—</b>											
January.....	99.0	96.1	102.5	101.0	105.8	110.7	100.9	100.2	105.7	107.0	107.2
February.....	97.4	95.0	101.9	100.5	106.1	110.4	100.2	100.5	106.0	108.6	107.2
March.....	97.8	90.4	103.4	100.6	106.9	111.8	100.4	101.2	106.3	111.1	108.4
April.....	101.6	100.4	106.9	96.6	107.9	113.0	102.1	103.7	105.2	112.9	109.4
May.....	111.6	117.9	111.5	106.4	111.8	115.9	105.3	109.7	110.7	116.7	113.2
June.....	127.7	117.1	113.1	114.5	115.1	118.3	108.9	113.6	115.7	121.5	116.7
July.....	134.4	123.3	113.9	118.2	116.0	117.8	110.7	118.3	118.6	124.4	117.7
August.....	137.0	124.9	113.2	120.4	118.4	119.1	111.0	118.0	119.2	126.2	119.7
September.....	134.7	123.8	113.2	117.0	117.5	120.4	109.6	117.0	117.3	124.8	119.1
October.....	132.3	127.0	112.5	115.1	117.1	120.5	108.9	115.8	116.3	123.0	118.6
November.....	127.1	124.8	108.1	115.6	117.4	121.0	108.4	115.4	116.1	122.5	118.7
December....	115.8	106.2	102.5	110.4	114.2	119.1	106.2	111.5	114.1	120.1	115.9

### 10.—Annual Average Index Numbers of Employment, by Metropolitan Area, 1961-65, and Monthly Indexes 1965

NOTE.—These indexes refer to the last week of each month and are on the base 1961=100.

Year and Month	Montreal	Quebec	Toronto	Ottawa-Hull	Hamilton	Windsor	Winnipeg	Vancouver
<b>Averages—</b>								
1961.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1962.....	101.5	103.4	102.9	102.3	104.1	98.8	99.4	101.0
1963.....	103.0	106.4	105.8	103.2	107.3	105.5	101.2	104.3
1964.....	107.7	108.1	110.5	106.1	113.4	116.8	104.1	109.6
1965.....	113.9	113.0	115.8	111.5	119.8	132.7	107.4	117.9
<b>1965—</b>								
January.....	108.3	106.4	111.2	106.3	113.8	125.0	102.9	108.9
February.....	108.8	107.2	111.2	105.6	114.0	102.4	102.0	109.7
March.....	109.7	108.4	112.3	106.6	115.6	124.6	102.6	112.4
April.....	111.4	111.1	112.9	107.7	118.0	133.0	104.5	114.5
May.....	113.1	112.1	115.0	111.6	119.6	134.4	106.6	116.4
June.....	114.6	116.1	116.3	114.5	120.7	138.2	109.4	120.0
July.....	113.8	115.9	115.1	115.2	121.8	126.1	110.4	121.8
August.....	116.7	118.1	116.6	114.9	123.3	136.0	110.8	123.3
September.....	117.3	115.1	118.9	113.7	123.4	140.8	110.0	122.4
October.....	118.2	115.3	120.2	114.1	122.7	142.0	110.3	121.4
November.....	119.0	116.0	120.9	114.0	123.9	144.2	110.7	122.3
December.....	116.7	114.5	118.8	113.4	120.9	145.2	108.8	121.5

**Weekly Wages and Salaries.**—Average weekly wages and salaries have increased substantially in the years for which current payroll statistics have been collected, rising from \$23.44 in 1939 to \$91.01 in 1965. The upward movement gained momentum after the end of the War and average annual increases from 1946 to 1952 were more than twice

as great as those between 1939 and 1946. After 1952 the rate of increase, in terms of year-to-year percentage changes, fell slightly below that recorded during the war years, particularly between 1959 and 1962, when average earnings rose at rates of about 3 p.c. per annum. Over the next three years the rate increased moderately and earnings in 1965 were 5.2 p.c. higher than in 1964.

**11.—Annual Index Numbers of Employment and Average Weekly Wages and Salaries, by Industry, Province and Urban Area, 1963-65**

Industry, Province and Urban Area	Employment (1961=100)			Average Weekly Wages and Salaries		
	1963	1964	1965	1963	1964	1965
Industry				\$	\$	\$
Forestry.....	96.9	102.8	104.2	87.02	92.13	96.81
Mining (incl. milling).....	97.9	98.8	105.1	101.96	105.73	111.53
Manufacturing.....	106.1	111.1	117.2	86.90	90.42	94.78
Durable goods <sup>1</sup> .....	109.5	116.7	126.0	94.16	97.96	102.97
Non-durable goods <sup>1</sup> .....	103.4	106.6	110.1	80.69	83.79	87.24
Construction.....	100.9	105.8	119.7	95.27	100.06	107.92
Transportation, communication and other utilities.....	100.1	101.5	103.9	89.71	93.32	98.77
Trade.....	103.5	108.1	114.5	68.80	71.01	73.49
Finance, insurance and real estate.....	107.6	111.9	116.6	77.63	81.88	88.29
Service.....	106.1	114.7	125.8	60.44	62.30	65.76
<b>Industrial Composite.....</b>	<b>104.4</b>	<b>108.2</b>	<b>114.3</b>	<b>83.27</b>	<b>86.51</b>	<b>91.01</b>
Province						
Newfoundland.....	102.0	107.6	118.0	74.89	77.42	80.22
Prince Edward Island.....	101.8	105.9	112.2	58.70	60.49	62.48
Nova Scotia.....	101.1	103.6	108.6	68.03	70.14	73.43
New Brunswick.....	100.6	104.6	109.7	68.28	71.01	74.76
Quebec.....	103.0	107.5	112.9	80.99	84.46	88.62
Ontario.....	105.4	110.1	116.5	86.22	89.82	94.41
Manitoba.....	101.6	103.4	106.1	77.56	79.02	82.28
Saskatchewan.....	102.4	105.1	110.4	79.32	81.27	84.90
Alberta.....	102.3	106.1	112.6	85.61	85.82	89.88
British Columbia.....	104.9	109.4	118.2	90.10	94.11	100.71
Urban Area						
Corner Brook, Nfld.....	102.2	103.5	114.2	85.83	87.34	89.92
St. John's, Nfld.....	108.3	110.5	126.3	63.85	66.72	69.94
Halifax, N.S.....	101.5	104.9	108.7	69.64	72.21	76.21
Sydney, N.S.....	102.0	95.9	99.9	81.67	83.66	83.77
Moncton, N.B.....	98.9	104.4	110.2	65.72	67.42	70.42
Saint John, N.B.....	103.3	99.0	104.4	69.67	72.12	76.36
Chicoutimi, Que.....	96.2	101.8	102.7	100.52	102.84	105.51
Drummondville, Que.....	111.2	121.3	125.9	68.10	69.71	73.47
Granby, Que.....	96.8	100.3	104.8	69.32	72.49	74.39
Montreal, Que.....	103.0	107.7	113.9	82.35	85.89	90.20
Ottawa, Ont.-Hull, Que.....	103.2	106.1	111.5	77.46	80.72	84.51
Quebec, Que.....	106.4	108.1	113.0	71.98	74.08	77.72
Rouyn-Noranda, Que.....	105.5	117.8	127.4	84.19	85.55	87.65
St. Hyacinthe, Que.....	105.3	111.4	118.8	61.29	65.31	69.08
St. Jean, Que.....	90.7	97.8	116.2	70.32	72.84	76.12
St. Jérôme, Que.....	109.3	118.6	120.4	65.92	69.20	71.18
Shawinigan, Que.....	94.5	99.5	106.1	90.92	90.68	94.42
Sherbrooke, Que.....	107.7	113.6	116.7	70.22	73.68	77.14
Sorel, Que.....	123.5	137.5	146.1	87.98	93.68	98.84
Thetford Mines, Que.....	104.5	97.8	96.5	91.96	94.52	97.11
Trois-Rivières, Que.....	105.3	109.9	112.2	76.53	79.91	81.74
Valleyfield, Que.....	101.0	105.3	119.9	80.93	84.90	89.46
Belleville, Ont.....	105.8	109.0	109.2	72.06	76.01	80.90
Brampton, Ont.....	148.1	176.0	200.0	85.16	89.40	92.39
Brantford, Ont.....	107.1	112.0	128.3	79.04	81.76	88.46
Brookville, Ont.....	111.4	115.0	119.8	84.36	86.17	90.09
Chatham, Ont.....	105.3	111.8	122.0	83.09	86.27	90.41

<sup>1</sup> Durable goods manufacturing includes wood products, furniture and fixtures, primary metal industries, metal fabricating industries, machinery (except electrical), transportation equipment, electrical products, and non-metallic mineral products. Non-durable goods manufacturing includes all other manufacturing industries.



### 11.—Annual Index Numbers of Employment and Average Weekly Wages and Salaries, by Industry, Province and Urban Area, 1963-65—concluded

Urban Area	Employment (1961=100)			Average Weekly Wages and Salaries		
	1963	1964	1965	1963	1964	1965
<b>Urban Area—concluded</b>				\$	\$	\$
Cornwall, Ont.....	106.8	114.2	117.0	83.63	85.93	90.66
Fort William—Port Arthur, Ont.....	100.6	105.0	116.2	82.71	86.20	89.67
Guelph, Ont.....	107.8	112.1	123.2	76.97	80.37	85.02
Hamilton, Ont.....	107.3	113.4	119.8	91.18	94.76	99.28
Kingston, Ont.....	105.6	114.9	122.0	82.89	87.24	89.95
Kitchener, Ont.....	114.1	120.7	129.1	76.37	79.35	83.47
London, Ont.....	108.4	113.2	118.8	79.03	83.09	85.39
Niagara Falls, Ont.....	102.4	107.7	110.6	83.95	87.66	92.53
North Bay, Ont.....	98.5	100.0	104.0	83.24	88.19	91.98
Oshawa, Ont.....	120.2	130.3	148.1	103.83	106.29	117.59
Peterborough, Ont.....	110.3	118.4	114.2	92.66	94.69	98.34
St. Catharines, Ont.....	107.4	108.8	131.9	93.00	99.30	106.39
St. Thomas, Ont.....	120.4	129.4	130.4	79.79	80.68	83.41
Sarnia, Ont.....	104.1	106.4	111.2	108.15	111.63	116.35
Sault Ste. Marie, Ont.....	107.0	112.0	115.7	106.95	106.20	110.92
Stratford, Ont.....	113.2	121.8	129.7	75.81	76.83	81.45
Sudbury, Ont.....	84.9	90.2	100.0	94.54	97.22	101.90
Timmins, Ont.....	98.1	94.8	93.8	74.41	77.16	82.06
Toronto, Ont.....	105.8	110.5	115.8	87.52	90.82	94.50
Welland, Ont.....	99.8	106.6	110.5	100.72	105.58	108.22
Windsor, Ont.....	105.5	114.8	132.7	95.09	101.03	107.31
Woodstock, Ont.....	115.7	120.8	129.9	79.47	82.91	87.09
Winnipeg, Man.....	101.2	104.1	107.4	74.28	76.28	79.07
Regina, Sask.....	108.2	112.9	116.3	77.99	79.90	82.77
Saskatoon, Sask.....	101.5	108.1	116.2	72.50	74.84	78.30
Calgary, Alta.....	102.2	106.8	115.3	83.33	86.65	89.80
Edmonton, Alta.....	104.7	109.9	117.4	78.67	80.48	84.10
Vancouver, B.C.....	104.3	109.6	117.9	88.57	92.47	97.83
Victoria, B.C.....	108.7	112.0	120.0	80.96	82.56	88.18

### 12.—Annual Average Weekly Wages and Salaries, by Industrial Division, 1961-65, and Monthly Averages 1965

Year and Month	Forestry	Mining (incl. milling)	Manu- facturing	Con- struc- tion	Trans- porta- tion, Com- muni- cation and Other Utilities	Trade	Finance, Insur- ance and Real Estate	Service <sup>1</sup>	Indus- trial Com- posite
	\$	\$	\$	\$	\$	\$	\$	\$	\$
<b>Averages—</b>									
1961.....	79.02	95.57	81.55	88.82	83.38	64.54	72.82	57.87	78.24
1962.....	82.15	98.53	84.00	91.19	86.00	66.53	75.35	59.31	80.54
1963.....	87.02	101.96	86.90	95.27	89.01	68.80	77.63	60.44	83.27
1964.....	92.13	105.73	90.42	100.06	93.32	71.07	81.88	62.30	86.51
1965.....	96.81	111.53	94.78	107.92	98.77	73.49	88.29	65.76	91.01
<b>1965—</b>									
January.....	92.94	110.31	93.18	103.94	96.85	72.40	85.02	64.03	89.07
February.....	98.63	110.34	92.75	104.10	97.77	72.30	86.13	64.43	89.18
March.....	100.60	110.70	94.75	106.54	96.31	72.57	86.68	64.16	90.03
April.....	98.32	109.90	94.88	105.73	97.58	72.93	87.84	64.66	90.32
May.....	91.64	108.61	94.52	105.43	98.00	73.59	88.24	65.04	90.41
June.....	92.60	110.93	94.66	106.31	98.02	74.24	88.72	65.94	90.88
July.....	93.82	109.77	93.59	110.20	98.64	74.53	89.23	66.11	90.95
August.....	93.71	110.37	93.97	110.88	98.51	74.26	89.04	65.79	91.12
September.....	98.84	111.37	95.48	112.79	100.13	73.54	89.13	66.65	92.19
October.....	101.88	115.65	97.10	115.29	101.53	73.94	89.26	67.47	93.56
November.....	103.07	115.91	97.42	114.02	101.56	73.60	89.74	67.46	93.44
December....	95.67	114.53	95.07	99.83	100.32	73.97	90.46	67.42	91.00

<sup>1</sup> Mainly hotels, restaurants, laundries, dry-cleaning establishments and recreational and business services.

**Hours and Earnings of Hourly Rated Wage-Earners.**—The monthly survey of employment and payrolls covers statistics of hours of work and paid absence of those wage-earners for whom records of hours are maintained, together with the corresponding totals of gross wages paid. These wage-earners are mainly hourly rated production workers; information on hours is frequently not kept by employers for ancillary workers nor, in many industries and establishments, for any wage-earners. Salaried employees are excluded by definition from the series. As a result of these exclusions, data are available for fewer industries and workers than are covered in the employment and average weekly wage and salary statistics.

During the period 1961-65, there was little change in average weekly hours but average hourly and weekly wages rose substantially. For the most part, upward wage-rate revisions in all industries were responsible for the increases. Technological changes, which in many cases involve the employment of more highly skilled workers at the expense of those in the lower-paid occupations, also contributed to the advance of average hourly earnings. From 1961 to 1965, average weekly wages rose 16.8 p.c. in manufacturing, 14.1 p.c. in mining and 22.6 p.c. in construction. Average hourly earnings increased 15.8 p.c. in manufacturing, 11.2 p.c. in mining and 22.7 p.c. in construction. In manufacturing, 1965 average hourly earnings of \$2.12 and average weekly wages of \$86.92 represented increases of 4.9 p.c. and 4.7 p.c., respectively, over the 1964 levels.

**13.—Annual Average Weekly Hours and Earnings of Hourly Rated Wage-Earners in Specified Industries, 1961-65, and Monthly Averages 1965**

Year and Month	All Manufactures			Mining (incl. milling)			Construction		
	Average Weekly Hours	Average Hourly Earnings	Average Weekly Wages	Average Weekly Hours	Average Hourly Earnings	Average Weekly Wages	Average Weekly Hours	Average Hourly Earnings	Average Weekly Wages
	No.	\$	\$	No.	\$	\$	No.	\$	\$
<b>Averages—</b>									
1961.....	40.6	1.83	74.45	41.8	2.13	88.82	41.4	2.07	85.75
1962.....	40.7	1.88	76.75	41.7	2.18	90.98	41.1	2.15	88.33
1963.....	40.8	1.95	79.51	42.0	2.24	93.87	41.2	2.24	92.20
1964.....	41.0	2.02	82.96	42.2	2.31	97.43	41.4	2.35	97.39
1965.....	41.0	2.12	86.89	42.5	2.43	103.30	41.4	2.54	105.15
<b>1965—</b>									
January.....	41.0	2.08	85.25	42.8	2.37	101.33	40.4	2.50	100.96
February.....	40.6	2.08	84.48	42.3	2.41	101.77	40.0	2.52	100.60
March.....	41.3	2.11	87.11	43.1	2.40	103.16	41.0	2.53	103.59
April.....	41.1	2.12	87.03	42.3	2.39	101.18	40.2	2.55	102.65
May.....	41.1	2.11	86.66	41.9	2.40	100.41	41.3	2.49	102.62
June.....	41.2	2.11	86.87	43.0	2.41	103.63	41.9	2.47	103.47
July.....	40.8	2.09	85.38	41.9	2.43	101.88	43.7	2.47	108.16
August.....	41.1	2.09	86.10	42.2	2.42	102.40	43.4	2.51	109.05
September...	41.4	2.13	88.08	42.0	2.45	103.03	43.3	2.56	110.84
October.....	41.6	2.15	89.53	43.3	2.49	107.72	43.8	2.60	113.94
November...	41.5	2.16	89.81	43.2	2.50	107.76	42.3	2.65	111.94
December....	39.7	2.18	86.40	42.0	2.51	105.31	35.4	2.65	93.93

### 14.—Average Weekly Hours and Earnings of Hourly Rated Wage-Earners in Specified Industries and Selected Urban Areas, 1963-65

Industry, Province and Urban Area	Average Weekly Hours			Average Hourly Earnings			Average Weekly Wages		
	1963	1964	1965	1963	1964	1965	1963	1964	1965
	No.	No.	No.	\$	\$	\$	\$	\$	\$
<b>Industry</b>									
<b>Mining, including milling</b>	<b>42.0</b>	<b>42.2</b>	<b>42.5</b>	<b>2.24</b>	<b>2.31</b>	<b>2.43</b>	<b>93.87</b>	<b>97.43</b>	<b>103.30</b>
Metal mining.....	41.5	41.7	41.9	2.32	2.39	2.52	96.22	99.48	105.76
Coal mining.....	42.6	42.2	41.3	1.86	1.92	1.96	79.25	80.84	80.68
<b>Manufacturing.....</b>	<b>40.8</b>	<b>41.0</b>	<b>41.0</b>	<b>1.95</b>	<b>2.02</b>	<b>2.12</b>	<b>79.51</b>	<b>82.96</b>	<b>86.89</b>
Durable goods <sup>1</sup> .....	41.4	41.6	41.7	2.12	2.20	2.31	87.83	91.60	96.11
Non-durable goods <sup>1</sup> .....	40.3	40.5	40.4	1.79	1.85	1.93	72.02	74.97	77.87
<b>Construction.....</b>	<b>41.2</b>	<b>41.4</b>	<b>41.4</b>	<b>2.24</b>	<b>2.35</b>	<b>2.54</b>	<b>92.20</b>	<b>97.39</b>	<b>105.15</b>
Building.....	39.0	39.5	39.4	2.33	2.45	2.62	90.78	95.43	103.23
Highways, bridges and streets.....	47.2	47.4	46.0	1.83	1.95	2.09	86.66	92.40	96.09
<b>Other—</b>									
Highway and bridge maintenance.....	39.4	39.8	40.1	1.75	1.81	1.89	68.91	71.49	75.87
Hotels, restaurants and taverns.....	37.4	36.6	36.1	1.11	1.17	1.22	41.54	42.70	44.16
Laundries, cleaners and pressers.....	40.0	39.8	39.2	1.09	1.15	1.23	43.53	45.64	48.02
<b>Province Manufacturing</b>									
Newfoundland.....	40.7	40.4	41.2	1.67	1.73	1.75	68.06	69.84	71.89
Nova Scotia.....	40.5	41.2	40.7	1.65	1.72	1.77	68.72	70.77	71.98
New Brunswick.....	41.0	41.2	41.6	1.63	1.68	1.75	66.66	68.97	72.96
Quebec.....	41.5	41.8	41.8	1.75	1.81	1.88	72.70	75.70	78.68
Ontario.....	40.9	41.2	41.1	2.06	2.13	2.25	84.11	87.84	92.33
Manitoba.....	40.0	40.3	40.4	1.75	1.78	1.84	70.05	71.62	74.13
Saskatchewan.....	39.0	39.4	39.9	2.05	2.10	2.15	79.84	82.69	87.42
Alberta.....	39.7	40.1	40.2	2.01	2.07	2.14	79.83	82.81	86.24
British Columbia.....	38.0	38.0	38.0	2.36	2.47	2.62	89.74	93.69	99.52
<b>Selected Urban Area Manufacturing</b>									
Montreal.....	40.8	41.1	41.2	1.79	1.85	1.93	73.00	76.10	79.34
Toronto.....	40.8	41.1	41.0	1.99	2.07	2.16	81.40	85.15	88.18
Hamilton.....	40.1	40.6	40.4	2.31	2.39	2.52	92.78	97.08	101.71
Windsor.....	42.5	42.7	42.1	2.41	2.52	2.67	102.28	107.68	112.26
Winnipeg.....	39.9	40.2	40.2	1.73	1.76	1.82	68.87	70.94	73.28
Vancouver.....	37.9	37.8	38.0	2.31	2.40	2.55	87.45	90.91	96.54

<sup>1</sup> Durable goods manufacturing includes wood products, furniture and fixtures, primary metal industries, metal fabricating industries, machinery (except electrical), transportation equipment, electrical products and non-metallurgical mineral products; non-durable goods manufacturing includes all other manufacturing industries.

#### Subsection 2.—Earnings and Hours in Manufacturing Industries\*

Information obtained in an annual survey of earnings and hours in manufacturing relating to the last week of October supplements the monthly data dealt with in Subsection 1. The survey was suspended in 1961 and 1962 but resumed in 1963. Separate figures of hours and earnings of men and women wage-earners and salaried employees were obtained in each survey and additional material has been collected periodically. Percentage distributions of wage-earners in a given range of hours were compiled each year from 1946 to 1949 and every third year thereafter to 1958 and again in 1965; statistics are shown for the

\* More detailed information is given in DBS annual report *Earnings and Hours of Work in Manufacturing* (Catalogue No. 72-204).



latest survey in Table 19. Percentage distributions of wage-earners and salaried employees by amounts earned in the survey week were obtained triennially from 1950-59 and again in 1964. Table 20 summarizes data on earnings of both groups of manufacturing employees.

The annual survey is limited to establishments usually employing 15 or more persons and covers approximately 90 p.c. of all employees reported to the annual Census of Manufactures. Establishments are asked to report for all casual, part-time and full-time employees on their staffs in the survey week, excluding proprietors, pensioners, homeworkers, employees absent without pay throughout the week, and staffs in manufacturers' separately organized sales offices. Gross earnings for the week are required, including regularly paid bonuses, overtime pay and amounts paid for absences in the survey week. The reported hours comprise part-time, full-time and overtime hours worked and hours of paid absence. The general averages obtained are usually very similar to those derived from the corresponding monthly survey.

Over the past 16 years, total employment as reported to this survey has increased 44.1 p.c., the durable goods industries absorbing 53.1 p.c. of the expansion. The relative sex composition of the manufacturing work force did not alter significantly over the period, although an increase of 68.4 p.c. was reported in the number of males employed compared with a gain of 37.6 p.c. in female employees; the relative proportion of men in the work force rose to 76.4 p.c. from 75.3 p.c. in 1949. During the same period, the percentage increase in salaried employees was three times as high as for wage-earners, being 97.7 p.c. for the former as against 32.7 p.c. for the latter. It should be noted, however, that the acceleration in the increase in the number of salaried employees was more pronounced in the first half of the period, a trend associated with developments in planning, administration and record-keeping which increased requirements for professional and clerical personnel, and with changes in manufacturing processes which have frequently reduced employment for production workers per unit produced. Changes in the industrial distribution of the employees also contribute to variations in the ratio of salaried personnel to wage-earners, which in any one period may be further influenced by seasonal, market and other conditions affecting levels of production. These usually cause sharper fluctuations in numbers of wage-earners than of salaried employees. Nevertheless, Table 16 shows that since 1956 this group has ranged between 22.9 p.c. and 24.4 p.c. of all employees in manufacturing. Of more particular interest in this regard is the pronounced shift within the salaried class from the clerical category to the "other salaried" personnel group, which includes managerial, professional, technical and supervisory employees. Since 1951, when statistics for clerical workers were first segregated from all salaried staff, the "other salaried" component has expanded from less than one third to one half this class of employee. Within the clerical category itself there has been a marked shift in the sex-composition, men now constituting just over one half of the total number compared with 58.3 p.c. in 1951.

The upward movement in hourly earnings and weekly wages and salaries in the 1956-65 period is apparent from Table 15. In each of these categories of income, men recorded advances of 40.4 p.c., 40.6 p.c. and 40.3 p.c., respectively, since the earlier year; in the same period, women's average hourly earnings increased by 41.0 p.c., their weekly wages by 39.6 p.c. and their salaries by 40.6 p.c.

Tables 17 and 18 show the 1965 averages of hours and earnings for wage-earners and salaried employees, respectively, for major industry groups, the provinces and the six largest metropolitan areas. Average weekly earnings of the clerical and "other salaried" components of the salaried class are also included for 1965 in the latter table.

It will be noted that women earn consistently lower average wages and salaries than do men in their industrial distributions. This results not only from pay differentials and occupational differences but also from such factors as a frequently shorter work week for women, a greater incidence of part-time work and absenteeism among them, their higher proportions of younger and less experienced workers, and their industrial distributions.

### 15.—Average Earnings of Male and Female Employees in Manufacturing, Survey Week 1956-65, and Percentage Increases over Previous Year

NOTE.—Survey week is the last week of October. This survey was not conducted in 1961 and 1962.

Year	Male		Female		Both Sexes	
	Average Earnings	Increase over Previous Year	Average Earnings	Increase over Previous Year	Average Earnings	Increase over Previous Year
AVERAGE HOURLY WAGES						
	\$	p.c.	\$	p.c.	\$	p.c.
1956.....	1.66	5.7	1.00	5.3	1.53	6.2
1957.....	1.75	5.4	1.05	5.0	1.61	5.2
1958.....	1.80	2.9	1.08	2.9	1.65	2.5
1959.....	1.88	4.4	1.11	2.8	1.72	4.2
1960.....	1.93	2.7	1.14	2.7	1.77	2.9
1963.....	2.12	9.8	1.27	11.4	1.95	10.2
1964.....	2.21	4.2	1.32	3.9	2.02	3.6
1965.....	2.33	5.4	1.41	6.8	2.13	5.4
AVERAGE WEEKLY WAGES						
	\$	p.c.	\$	p.c.	\$	p.c.
1956.....	70.67	5.7	39.29	4.7	63.97	5.7
1957.....	72.21	2.2	39.49	0.5	65.31	2.1
1958.....	75.03	3.9	41.90	6.1	67.85	3.9
1959.....	79.20	5.6	43.36	3.5	71.35	5.2
1960.....	80.34	1.4	43.96	1.4	72.39	1.5
1963.....	89.86	11.8	49.22	12.0	80.80	11.6
1964.....	94.00	3.3	51.41	4.4	84.35	4.4
1965.....	99.38	5.7	54.85	6.7	89.32	5.9
AVERAGE WEEKLY SALARIES						
	\$	p.c.	\$	p.c.	\$	p.c.
1956.....	99.05	5.9	49.31	4.9	85.23	5.8
1957.....	104.63	5.6	51.84	5.1	89.92	5.5
1958.....	108.34	3.5	54.07	4.3	93.74	4.2
1959.....	112.78	4.1	55.73	3.1	97.10	3.6
1960.....	116.41	3.2	57.98	4.0	100.47	3.5
1963.....	128.50	10.4	64.17	10.7	111.29	10.8
1964.....	133.55	3.9	66.51	3.6	115.54	3.8
1965.....	139.00	4.1	69.31	4.2	120.27	4.1

### 16.—Proportions of Male and Female Employees classified as Salaried Staff, Survey Week 1956-65

NOTE.—Survey week is the last week of October. This survey was not conducted in 1961 and 1962.

Year	Durable Goods			Non-durable Goods			All Manufacturing		
	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1956.....	19.4	47.5	22.8	24.1	20.9	23.0	21.4	27.8	22.9
1957.....	20.8	49.8	24.3	24.0	22.2	23.4	22.2	29.2	23.8
1958.....	21.9	48.6	25.0	24.7	22.2	23.9	23.2	28.7	24.4
1959.....	20.5	47.2	23.7	24.4	21.8	23.5	22.3	27.9	23.6
1960.....	22.0	49.2	25.2	24.3	22.6	23.8	23.1	28.7	24.4
1963.....	21.4	44.2	24.2	25.0	22.2	24.0	23.1	27.6	24.1
1964.....	21.5	43.7	24.3	25.2	22.0	24.1	23.2	27.4	24.2
1965.....	21.1	42.4	23.8	25.6	22.2	24.5	23.1	27.5	24.1

### 17.—Average Hours and Earnings of Wage-Earners in Manufacturing, by Industry, Province and Selected Urban Area, Survey Week 1965

NOTE.—Survey week is the last week of October. Based on the unrevised standard industrial classification.

Industry, Province and Urban Area	Average Weekly Hours			Average Hourly Earnings			Average Weekly Earnings		
	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes
Industry	No.	No.	No.	\$	\$	\$	\$	\$	\$
Food and beverages.....	42.8	38.0	41.5	2.03	1.36	1.87	86.97	51.64	77.53
Tobacco and tobacco products.....	38.1	37.4	37.7	2.55	2.24	2.39	97.40	83.87	90.31
Rubber products.....	43.1	38.8	42.1	2.44	1.53	2.25	105.14	59.27	94.96
Leather products.....	41.0	38.8	39.9	1.74	1.23	1.49	71.24	47.77	59.43
Textile products (except clothing).....	43.9	40.4	42.7	1.79	1.38	1.66	78.48	55.84	70.79
Clothing (textile and fur)....	41.9	38.4	39.2	1.89	1.28	1.43	79.10	49.06	56.00
Wood products.....	42.7	41.3	42.6	1.95	1.40	1.91	83.22	57.65	81.41
Paper products.....	42.7	39.8	42.4	2.61	1.46	2.50	111.17	58.00	105.86
Printing, publishing and allied industries.....	39.7	37.0	39.1	2.89	1.52	2.61	114.88	56.42	101.95
Iron and steel products.....	42.5	38.9	42.3	2.49	1.63	2.45	105.80	63.43	103.83
Transportation equipment....	43.3	39.7	43.1	2.64	1.81	2.59	114.12	71.71	111.57
Non-ferrous metal products.....	42.0	40.0	41.8	2.47	1.35	2.39	103.58	53.80	99.79
Electrical apparatus and supplies.....	42.9	39.5	41.7	2.37	1.63	2.14	101.58	66.29	89.22
Non-metallic mineral products.....	45.5	38.9	45.0	2.28	1.69	2.24	103.81	65.89	100.84
Products of petroleum and coal.....	42.3	35.7	42.3	2.98	1.96	2.97	125.97	69.91	125.43
Chemical products.....	42.2	38.7	41.6	2.46	1.49	2.30	103.79	57.78	95.89
Miscellaneous manufacturing industries.....	43.4	40.1	42.0	1.94	1.29	1.69	84.26	51.87	70.80
<b>Totals, Manufacturing</b>	<b>42.7</b>	<b>38.9</b>	<b>41.8</b>	<b>2.33</b>	<b>1.41</b>	<b>2.13</b>	<b>99.38</b>	<b>54.85</b>	<b>89.32</b>
Durable goods <sup>1</sup> .....	42.9	39.7	42.6	2.39	1.63	2.32	102.63	64.49	98.95
Non-durable goods <sup>1</sup> .....	42.5	38.7	41.1	2.24	1.35	1.95	95.15	52.33	80.27
<b>Province</b>									
Newfoundland.....	40.4	39.8	40.3	1.84	0.80	1.72	74.32	31.98	69.30
Nova Scotia.....	42.4	38.0	41.7	1.91	0.96	1.77	80.89	36.61	73.88
New Brunswick.....	43.0	37.9	42.2	1.92	1.00	1.78	82.38	37.87	75.12
Quebec.....	44.2	39.1	42.8	2.09	1.34	1.89	92.27	52.25	80.92
Ontario.....	42.6	38.9	41.8	2.47	1.50	2.27	105.18	58.21	94.88
Manitoba.....	42.2	38.7	41.2	2.10	1.26	1.88	88.48	48.88	77.64
Saskatchewan.....	41.9	37.7	41.4	2.24	1.54	2.16	93.70	58.05	89.39
Alberta.....	41.6	37.2	40.9	2.30	1.45	2.17	95.55	54.04	88.87
British Columbia.....	39.1	37.3	38.9	2.75	1.71	2.65	107.49	63.97	103.33
<b>Selected Urban Area</b>									
Montreal.....	43.9	39.0	42.2	2.20	1.42	1.96	96.58	55.41	82.58
Toronto.....	42.7	39.6	41.8	2.43	1.47	2.15	103.74	58.16	89.92
Hamilton.....	40.7	38.7	40.4	2.69	1.54	2.54	109.62	59.74	102.52
Windsor.....	43.2	40.6	43.0	2.78	2.01	2.70	120.07	81.41	116.19
Winnipeg.....	42.0	38.5	41.0	2.09	1.30	1.88	87.79	50.18	77.05
Vancouver.....	39.2	36.7	38.8	2.74	1.72	2.59	107.27	62.97	100.62

<sup>1</sup> The durable goods group includes wood products, iron and steel products, transportation equipment, non-ferrous metal products, electrical apparatus and supplies, and non-metallic mineral products; the non-durable goods group includes all other manufacturing industries.



# 18.—Average Weekly Hours and Earnings of Salaried Employees and Earnings of Clerical and Other Salaried Classes in Manufacturing, Survey Week 1965

NOTE.—Survey week is the last week of October. Based on the unreviewed standard industrial classification.

Industry, Province and Urban Area	All Salaried Employees				Clerical and Related Workers				Other Salaried Employees			
	Average Weekly Hours		Average Weekly Earnings		Average Weekly Earnings		Average Weekly Earnings		Average Weekly Earnings		Average Weekly Earnings	
	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes
<b>Industry</b>												
No.	No.	No.	No.	\$	\$	\$	\$	\$	\$	\$	\$	\$
Food and beverages.....	38.9	37.1	38.4	122.14	65.78	106.81	95.63	64.98	78.80	132.69	76.00	130.62
Tobacco and tobacco products.....	37.4	36.8	37.2	149.35	81.68	123.23	92.67	78.90	83.98	166.61	86.60	148.36
Rubber products.....	39.1	37.9	38.5	130.48	69.39	115.69	103.00	68.10	87.45	165.61	89.97	144.02
Leather products.....	39.3	37.0	38.2	113.36	60.54	96.22	92.59	59.15	74.78	132.25	71.72	119.00
Textile products (except clothing).....	38.5	37.2	38.1	127.35	61.37	107.12	94.07	61.37	73.75	144.80	70.64	144.80
Clothing (textile and fur).....	39.6	37.7	38.7	117.12	65.27	104.02	92.99	61.91	72.73	157.12	76.30	157.12
Wood products.....	40.5	37.7	39.8	127.94	64.66	112.93	101.68	63.38	84.36	142.47	77.44	151.06
Paper products.....	37.1	36.3	36.9	155.92	73.44	136.37	108.50	71.84	91.06	180.42	83.43	177.46
Printing, publishing and allied industries.....	36.6	35.7	36.3	131.91	66.87	106.80	95.05	63.36	75.07	149.02	83.53	140.06
Iron and steel products.....	39.4	37.8	39.0	139.20	69.35	123.10	104.98	68.42	90.50	162.69	96.49	151.49
Transportation equipment.....	41.8	39.8	41.4	151.22	79.66	136.50	117.51	78.80	102.53	173.37	104.61	172.40
Non-ferrous metal products.....	38.0	37.0	37.8	146.42	71.06	130.38	106.39	69.64	89.57	162.54	85.47	160.05
Electrical apparatus and supplies.....	39.6	38.3	39.3	142.61	70.92	124.91	118.04	69.77	98.00	162.19	98.75	160.74
Non-metallic mineral products.....	39.4	38.0	38.9	132.99	67.31	118.65	101.07	67.76	87.54	150.77	64.11	146.35
Products of petroleum and coal.....	36.1	35.7	36.0	175.22	79.76	151.10	116.00	73.74	97.81	201.96	79.98	197.71
Chemical products.....	37.7	37.4	37.6	149.47	71.67	127.03	99.56	68.80	81.49	166.89	100.10	163.71
Miscellaneous manufacturing industries.....	38.9	37.6	38.5	135.04	68.49	114.29	104.02	67.35	81.69	146.46	82.70	143.64
<b>Totals, Manufacturing.....</b>	<b>39.0</b>	<b>37.4</b>	<b>38.6</b>	<b>139.00</b>	<b>69.31</b>	<b>129.37</b>	<b>105.72</b>	<b>67.83</b>	<b>87.19</b>	<b>156.93</b>	<b>84.49</b>	<b>153.47</b>
Durable goods <sup>1</sup> .....	39.9	38.2	39.5	141.60	71.14	125.59	110.49	70.22	93.78	161.89	89.81	160.29
Non-durable goods <sup>1</sup> .....	38.1	36.9	37.5	136.38	68.08	115.45	99.48	66.10	80.74	152.57	83.05	147.77
<b>Province</b>												
Newfoundland.....	41.0	38.4	40.5	105.13	53.18	96.15	84.09	53.96	74.38	119.36	63.89	117.28
Nova Scotia.....	39.3	36.5	38.7	114.13	53.92	99.74	86.46	53.15	71.76	130.35	54.40	128.06
New Brunswick.....	39.2	38.3	39.0	121.80	54.78	104.07	85.79	54.83	70.71	139.70	54.40	134.38
Quebec.....	38.3	37.1	38.0	136.66	69.91	118.76	103.06	67.76	87.22	159.16	85.78	154.83
Ontario.....	39.2	37.5	38.8	143.18	70.85	123.13	109.90	69.44	89.09	159.81	87.06	156.61
Manitoba.....	39.0	37.6	38.6	116.63	57.11	100.20	89.94	56.07	72.78	129.88	65.88	126.22
Saskatchewan.....	39.2	38.4	38.9	115.88	62.46	101.45	84.05	60.91	71.42	138.11	76.56	125.62
Alberta.....	39.8	38.1	39.4	126.16	62.87	111.07	99.58	61.82	80.95	136.90	71.83	134.04
British Columbia.....	39.4	37.7	39.0	148.75	70.84	130.49	111.72	69.28	90.35	163.12	90.03	160.86
<b>Selected Urban Area</b>												
Montreal.....	38.0	36.9	37.7	142.03	73.44	123.31	105.34	71.34	89.18	166.68	90.70	161.72
Toronto.....	38.4	38.0	38.0	145.62	73.76	123.30	109.56	71.83	88.46	162.43	92.07	158.28
Hamilton.....	39.4	38.0	39.1	152.18	71.72	131.02	120.97	70.94	98.30	174.19	90.58	172.22
Windsor.....	43.8	40.3	43.0	166.68	85.21	148.62	131.68	84.57	111.24	185.96	98.88	184.28
Winnipeg.....	38.7	37.5	38.4	115.73	57.20	99.30	89.20	56.41	72.54	129.48	67.00	125.87
Vancouver.....	39.2	37.6	38.8	146.08	71.06	125.92	106.97	69.34	87.25	163.69	94.04	161.21

<sup>1</sup> The durable goods group includes wood products, iron and steel products, transportation equipment, non-ferrous metal products, electrical apparatus and supplies, and other manufacturing industries. The non-durable goods group includes all other manufacturing industries.

### 19.—Percentage Distribution of Male and Female Wage-Earners, by Range of Hours Worked, Survey Week 1965

Range of Hours	Durable Goods			Non-durable Goods			All Manufacturing		
	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Under 15.....	1.4	2.1	1.4	1.6	2.9	2.0	1.5	2.7	1.7
15—20.....	1.1	1.9	1.2	1.2	2.7	1.7	1.1	2.5	1.4
21—24.....	1.1	2.0	1.2	1.1	2.6	1.6	1.1	2.5	1.4
25—30.....	1.2	2.8	1.3	1.4	5.0	2.7	1.3	4.5	2.0
31—34.....	3.5	6.5	3.8	3.3	7.3	4.7	3.4	7.2	4.3
35—39.....	7.7	13.2	8.3	10.4	19.8	13.7	8.9	18.4	11.1
40.....	35.3	37.0	36.4	30.9	23.9	28.5	33.4	26.6	31.9
41—43.....	9.4	9.3	9.4	11.5	10.9	11.3	10.3	10.6	10.4
44.....	4.9	4.8	4.9	5.0	4.7	4.9	5.0	4.7	4.9
45.....	5.0	4.6	5.0	5.1	4.7	4.9	5.0	4.6	5.0
46—47.....	4.3	3.9	4.3	5.0	4.0	4.7	4.6	4.0	4.5
48.....	7.5	3.9	7.1	6.9	3.5	5.7	7.2	3.6	6.4
49—53.....	8.2	5.5	7.9	7.9	4.8	6.8	8.1	4.9	7.4
54.....	1.6	0.4	1.5	1.2	0.7	1.0	1.4	0.6	1.2
55—64.....	6.0	1.7	5.6	5.5	2.0	4.3	5.8	2.0	4.9
65+.....	1.8	0.3	1.6	2.1	0.5	1.5	1.9	0.5	1.6

### 20.—Percentage Distribution of Employees in Manufacturing, by Weekly Earnings, Survey Week 1965

NOTE.—Survey week is the last week of October.

Range of Earnings	Durable Goods			Non-durable Goods			All Manufacturing		
	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
WAGE-EARNERS									
Under \$20.....	1	2	1	1	5	2	1	4	2
\$ 20—\$ 29.....	1	3	1	1	8	4	1	7	2
30—39.....	1	9	2	2	18	8	2	16	5
40—49.....	2	20	4	4	24	11	3	23	8
50—59.....	5	21	6	7	19	11	6	19	9
60—69.....	7	16	8	10	12	10	8	13	9
70—79.....	11	13	11	12	7	10	12	8	11
80—89.....	15	9	14	15	4	11	15	5	13
90—99.....	17	4	16	13	2	9	15	2	12
100—109.....	13	2	12	11	1	8	12	1	10
110—119.....	10	1	9	8	—	5	9	—	7
120—139.....	10	1	9	8	—	6	8	—	6
140—159.....	4	—	4	4	—	2	4	—	3
160—179.....	2	—	2	1	—	1	2	—	1
180—199.....	1	—	1	1	—	—	1	—	1
200+.....	1	—	1	1	—	—	1	—	1
SALARIED EMPLOYEES									
Under \$20.....	—	—	—	—	1	—	—	1	—
\$ 20—\$ 29.....	—	1	—	—	1	1	—	1	—
30—39.....	—	3	1	1	5	2	1	4	1
40—49.....	1	11	3	2	14	6	1	13	4
50—59.....	2	20	6	3	21	9	3	20	8
60—69.....	4	23	8	5	22	10	4	23	9
70—79.....	5	18	8	6	16	9	5	17	9
80—89.....	6	11	7	8	9	8	7	10	8
90—99.....	8	6	8	9	5	8	9	5	8
100—109.....	10	3	8	10	3	8	10	3	8
110—119.....	10	1	8	9	1	7	9	1	7
120—139.....	19	1	15	14	1	10	17	1	12
140—159.....	12	—	9	10	1	7	11	—	8
160—179.....	8	—	6	7	—	5	7	—	5
180—199.....	5	—	4	4	—	3	4	—	3
200+.....	10	—	8	11	—	8	11	—	8

### Subsection 3.—Estimates of Employment\*

Estimates of total employment in establishments in the commercial sector of industry were published for the first time in 1965. Results of a monthly survey of employment in a sample of small firms initiated in 1961 were added to data from the long-standing employment and earnings survey to produce estimates of total employment by industrial division.

The estimates of employees are published for those eight major industrial divisions for which monthly and annual data are released in the publication *Employment and Average Weekly Wages and Salaries*. They are considered, for most purposes, to be more reliable indicators of changes of employment than the larger establishment employment indexes. However, the nature of the new sample survey does not permit the publication of industry detail below industrial division level nor of geographic detail below the provincial level at this time. Further developments in connection with the sample survey are at present taking place.

Surveys of employment in the community service industries have been introduced recently. Education and hospital surveys are becoming well established and it is planned at a later date to extend the estimates to cover fishing and trapping, the entire non-commercial sector of community business and personal service and public administration and defence, thus providing comprehensive data for all non-agricultural industries.

\* More detailed information is given in DBS monthly publication *Estimates of Employees by Province and Industry* (Catalogue No. 72-008).

### 21.—Estimates of Numbers of Employees, by Industrial Division, 1961-65, and by Month 1965

Year and Month	Forestry	Mining (incl. mill- ing)	Manufacturing			Con- struc- tion	Trans- porta- tion, Com- muni- cation and Other Utilities	Trade	Finance, Insurance and Real Estate	Service (com- mer- cial sector) <sup>1</sup>	Total
			Dur- able	Non- dur- able	Total						
	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000
<b>Annual Average—</b>											
1961.....	68.0	106.6	574.5	712.3	1,286.9	275.2	576.6	729.5	194.2	362.9	3,600.1
1962.....	69.9	107.9	614.2	732.5	1,346.7	291.3	581.2	761.2	204.9	393.3	3,756.4
1963.....	67.9	106.1	647.9	747.3	1,395.2	297.5	586.4	790.2	215.8	415.6	3,875.4
1964.....	70.7	107.4	689.6	774.3	1,464.0	315.6	602.8	821.7	227.0	449.1	4,058.5
1965.....	71.6	114.2	741.6	793.6	1,535.2	349.5	619.6	864.3	235.3	493.0	4,283.2
<b>1965—</b>											
January...	66.7	106.6	709.6	755.5	1,465.1	276.1	584.4	817.1	233.2	445.3	3,995.2
February...	62.8	108.1	705.3	759.6	1,464.9	274.7	585.2	823.0	230.4	447.7	3,997.6
March.....	53.5	110.3	721.8	763.4	1,485.2	279.2	589.5	828.9	230.9	452.7	4,030.9
April.....	44.3	108.1	721.8	765.6	1,487.4	304.3	597.7	839.3	231.4	463.2	4,076.4
May.....	63.7	114.2	741.7	785.9	1,527.6	355.0	620.0	855.3	234.8	487.5	4,258.9
June.....	81.6	119.1	760.8	805.8	1,566.6	385.7	637.3	872.4	234.7	517.6	4,415.7
July.....	87.1	121.0	742.4	817.1	1,559.5	401.5	647.9	872.8	238.7	533.1	4,462.2
August.....	87.5	120.1	744.4	837.9	1,582.3	411.5	651.9	871.6	237.8	539.5	4,502.4
September...	82.8	116.9	759.3	825.0	1,584.3	401.7	642.3	880.9	236.8	517.3	4,463.1
October...	80.6	115.7	765.8	813.3	1,579.1	401.7	632.9	890.6	238.1	511.2	4,450.1
November...	79.8	115.9	768.2	808.4	1,576.6	377.1	631.7	908.8	239.1	506.5	4,435.5
December...	68.9	113.8	758.2	785.9	1,544.1	325.4	614.3	910.9	237.6	494.8	4,309.8

<sup>1</sup> Includes health services (except hospitals); motion picture and recreational services; services to business management; personal services (except domestic service); and miscellaneous services.



## Subsection 4.—Estimates of Labour Income\*

Wages and salaries, as shown in Table 22, include living allowances, bonuses, commissions and "tips" and are measured prior to deductions of all kinds (income tax, employees' contributions to the unemployment insurance fund and to welfare and pension funds, etc.). Both money payments and payments in kind (i.e., free board and lodging) made to, or on behalf of, residents of Canada, excluding military pay and allowances, are included in the total of wages and salaries. Retroactive wage payments are included in the month in which they are paid. Supplementary labour income comprises payments made by employers on behalf of their employees in order to provide them with future benefits, either definite or contingent. Specifically, these payments include employers' contributions to employee welfare and pension funds, to workmen's compensation and industrial vacation funds, and to the unemployment insurance fund. Contributions to Armed Forces pension funds are also included.

\* More detailed information is given in DBS monthly publication *Estimates of Labour Income* (Catalogue No. 72-005).

## 22.—Wages and Salaries, by Industry, and Supplementary Labour Income, 1961-65, and by Month 1965

NOTE.—Based on the unrevised standard industrial classification. Figures are unadjusted for seasonal variation.

(Millions of dollars)

Year and Month	Agriculture, Fishing and Trapping	Forestry	Mining	Manufacturing	Construction	Transportation, Storage and Communication	Public Utilities
<b>Annual Average—</b>							
1961.....	218	283	542	5,306	1,252	1,862	357
1962.....	227	300	559	5,699	1,357	1,909	378
1963.....	235	308	572	6,045	1,419	2,008	397
1964.....	244	343	600	6,582	1,582	2,129	421
1965.....	252	378	678	7,262	1,962	2,316	455
<b>1965—</b>							
January.....	12.6	25.6	52.4	566.1	123.9	181.9	35.9
February.....	13.2	26.7	53.3	564.4	122.2	180.4	35.9
March.....	14.3	25.2	54.2	583.2	128.2	178.7	35.8
April.....	16.8	21.4	53.1	587.3	136.3	185.1	36.4
May.....	21.8	27.5	55.9	600.0	156.6	191.7	37.5
June.....	26.1	34.4	58.0	614.2	169.1	192.1	38.8
July.....	31.0	37.6	58.3	601.2	185.2	199.8	39.4
August.....	33.2	36.3	58.3	614.2	193.3	199.0	40.0
September.....	27.7	38.0	57.4	626.4	196.7	208.9	39.1
October.....	21.9	37.8	58.9	636.3	201.1	202.1	39.2
November.....	17.5	37.6	59.4	639.0	187.9	201.9	38.7
December.....	16.0	29.4	59.0	630.0	161.5	195.0	38.5

**22.—Wages and Salaries, by Industry, and Supplementary Labour Income, 1961-65, and by Month 1965—concluded**

Year and Month	Trade	Finance, Insurance and Real Estate	Service	Government Non-military	Total Wages and Salaries	Supplementary Labour Income	Total Labour Income
<b>Annual Average—</b>							
1961.....	2,740	833	3,060	1,723	18,176	820	18,996
1962.....	2,881	889	3,363	1,828	19,390	843	20,233
1963.....	3,089	955	3,697	1,949	20,674	873	21,547
1964.....	3,358	1,046	4,137	2,065	22,507	926	23,433
1965.....	3,714	1,134	4,690	2,220	25,061	975	26,036
<b>1965—</b>							
January.....	288.0	91.1	367.2	168.8	1,913.5	78.2	1,991.7
February.....	288.7	91.8	373.0	170.4	1,920.0	78.5	1,998.5
March.....	292.3	92.4	378.0	174.4	1,956.7	79.0	2,035.7
April.....	299.2	93.0	385.6	177.5	1,991.7	79.6	2,071.3
May.....	305.5	93.6	395.2	180.6	2,065.9	80.7	2,146.6
June.....	312.0	94.2	403.1	188.9	2,130.9	81.6	2,212.5
July.....	310.3	94.8	366.7	193.9	2,118.2	81.5	2,199.7
August.....	312.2	95.4	372.4	198.9	2,153.2	82.1	2,235.3
September.....	317.4	96.0	410.6	204.8	2,223.0	83.3	2,306.3
October.....	322.9	96.6	411.7	189.5	2,218.0	83.5	2,301.5
November.....	330.1	97.2	412.8	186.7	2,208.8	83.5	2,292.3
December.....	335.4	97.8	413.4	185.9	2,161.9	83.1	2,245.0

### Section 4.—Wage Rates, Hours of Labour and Other Working Conditions

Statistics on occupational wage rates by industry and locality, with standard weekly hours of labour, are compiled by the federal Department of Labour and published in the annual report *Wage Rates, Salaries and Hours of Labour*. The statistics are based on an annual survey covering some 30,000 establishments in most industries and apply to the last normal pay period preceding Oct. 1. Average wage rates of time workers and average straight-time earnings of piece workers and other incentive workers for selected occupations are shown separately in the report but are combined in the calculation of industry index numbers shown in Table 23. Predominant ranges of rates for each occupation used are also given; overtime pay is excluded.

The index numbers of Table 23 measure changes in wage rates for non-office employees below the rank of foreman. They do not, however, provide a basis for comparing the level of wages in one industry with that in another. Information on concepts and methods of developing these statistics is given in the annual report.

### 23.—Index Numbers of Average Wage Rates for Certain Main Industrial Groups, 1956-65 (1949=100)

NOTE.—Indexes back to 1901 may be obtained from the Department of Labour publication *Wage Rates, Salaries and Hours of Labour 1962*.

Year	Log- ging	Coal Mining	Metal Mining	Manufacturing			Con- struc- tion	Rail- ways	Tele- phone	Per- sonal Service	General Average
				Dur- able Goods	Non- durable Goods	All Manu- factur- ing					
1956.....	160.8	123.6	150.8	151.2	148.3	149.8	150.7	146.8	157.6	136.1	148.7
1957.....	168.4	137.4	156.2	160.7	156.3	158.6	160.7	153.3	165.9	138.9	156.5
1958.....	172.0	147.6	160.8	166.1	162.2	164.2	171.0	153.3	175.4	143.5	162.5
1959.....	176.2	147.3	164.3	170.8	167.0	168.9	180.7	165.7	175.3	146.1	168.8
1960.....	184.3	148.2	169.4	176.6	173.2	175.0	192.6	166.4	178.0	156.8	175.5
1961.....	190.8	154.5	173.9	180.3	178.7	179.5	196.3	176.5	188.0	158.8	180.0
1962.....	199.4	161.1	177.2	184.7	184.3	184.5	206.2	180.5	195.3	162.2	185.9
1963.....	208.2	155.6	192.3	190.6	190.4	190.5	214.1	185.9	200.2	171.1	192.5
1964.....	219.6	157.4	188.0	197.6	196.8	197.2	223.6	193.8	203.5	182.2	199.8
1965.....	239.0	166.7	195.0	207.8	206.0	207.0	235.2	201.3	212.3	195.4	210.1

### 24.—Average Wage and Salary Rates for Selected Occupations in Certain Cities Across Canada, Oct. 1, 1965

Industry and Occupation	Halifax, N.S.	Saint John, N.B.	Sher- brooke, Que.	Montreal, Que.	Toronto, Ont.	Hamilton, Ont.
	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.
<b>Construction (building and structures only)—</b>						
Bricklayer and mason.....	2.68	2.55	2.55	3.12	3.65	3.55
Carpenter and joiner.....	2.42	2.20	2.35	2.91	3.38	3.58
Electrician.....	2.65	2.20	2.30	3.20	4.10	3.85
Painter and glazier.....	2.15	2.08	2.25	2.81	3.00	2.90
Plasterer.....	2.69	2.35	2.55	3.12	3.45	3.45
Plumber and steamfitter.....	2.72	2.30	2.60	3.25	4.00	3.80
Sheet metal worker.....	2.46	1.95	2.60	2.91	3.79	3.60
Labourer.....	1.81	1.25	1.95	2.26	2.40	2.20
Truck driver.....	1.85	1.30	1.95	2.26	2.40	2.20
<b>Manufacturing and Other Industries—1</b>						
General labourer, male.....	1.68	1.57	1.53	1.73	1.94	2.06
<b>Maintenance Trades—</b>						
Carpenter.....	2.23	2.07	2.00	2.37	2.47	2.68
Electrician.....	2.42	2.30	2.11	2.55	2.78	2.91
Machinist.....	2.44	2.22	2.05	2.54	2.69	2.94
Mechanic.....	2.11	2.11	2.10	2.44	2.58	2.81
Millwright.....	2.55	2.41	1.91	2.46	2.67	2.71
Pipefitter.....	2.53	2.36	1.96	2.58	2.63	2.81
Tool and die maker.....	2.55	2.24	—	2.62	2.89	2.84
Welder.....	2.35	2.12	2.02	2.38	2.49	2.79
<b>Service Occupations—</b>						
Truck driver, light and heavy.....	1.73	1.61	1.69	1.95	2.11	2.14
Trucker, power.....	1.70	1.98	1.58	2.10	2.30	2.41
<b>Office Occupations, Male—</b>	per wk.	per wk.	per wk.	per wk.	per wk.	per wk.
Bookkeeper, senior.....	99	102	103	111	113	117
Clerk, intermediate.....	72	76	80	80	82	90
Clerk, senior.....	101	101	101	106	108	114
Order clerk.....	77	77	82	88	92	100
Draughtsman, intermediate.....	92	100	95	107	104	101
Draughtsman, senior.....	111	125	130	135	130	124
<b>Office Occupations, Female—</b>						
Clerk, intermediate.....	53	54	57	67	69	67
<b>Machine Operator—</b>						
Bookkeeping.....	55	54	52	63	67	63
Calculating.....	57	45	48	65	67	66
Payroll clerk.....	58	63	54	71	73	67
Secretary, senior.....	73	73	71	89	87	86
Stenographer, junior.....	51	52	52	63	64	63
Stenographer, senior.....	65	63	66	76	75	75
Switchboard operator and receptionist.....	53	51	54	63	66	63
Typist, junior.....	48	46	43	55	58	57
Typist, senior.....	54	55	59	66	68	67

For footnote, see end of table, p. 764.



**24.—Average Wage and Salary Rates for Selected Occupations in Certain Cities  
Across Canada, Oct. 1, 1965—concluded**

Industry and Occupation	Winnipeg, Man.	Regina, Sask.	Saska- toon, Sask.	Calgary, Alta.	Edmon- ton, Alta.	Van- couver, B.C.
	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.
<b>Construction (building and structures only)—</b>						
Bricklayer and mason.....	3.05	2.90	2.75	3.25	3.15	3.51
Carpenter and joiner.....	2.80	2.51	2.70	3.10	3.05	3.49
Electrician.....	3.00	2.80	2.65	3.20	3.30	3.97
Painter and glazier.....	2.50	2.20	2.29	2.50	2.50	3.36
Plasterer.....	2.90	2.80	2.70	3.00	3.20	3.25
Plumber and steamfitter.....	3.25	2.80	2.80	3.20	3.20	3.59
Sheet metal worker.....	2.75	2.67	2.70	2.95	3.05	3.37
Labourer.....	1.95	1.83	1.79	2.15	2.15	2.67
Truck driver.....	2.05	1.85	1.79	2.15	2.15	2.81
<b>Manufacturing and Other Industries—<sup>1</sup></b>						
General labourer, male.....	1.77	1.80	1.81	1.85	1.81	2.24
Maintenance Trades—						
Carpenter.....	2.44	2.30	2.32	2.48	2.50	2.88
Electrician.....	2.54	2.77	2.66	2.75	2.83	3.05
Machinist.....	2.51	2.67	2.71	2.66	2.78	2.84
Mechanic.....	2.38	2.47	2.49	2.54	2.50	2.87
Millwright.....	2.57	2.65	2.38	2.64	2.72	3.04
Pipefitter.....	2.51	2.47	2.64	2.71	2.85	2.80
Tool and die maker.....	2.33	—	—	2.60	—	2.98
Welder.....	2.48	2.54	2.29	2.60	2.62	2.86
Service Occupations—						
Truck driver, light and heavy.....	1.72	1.80	1.90	2.03	1.94	2.55
Trucker, power.....	2.02	1.92	1.67	2.17	1.97	2.58
	per wk.	per wk.	per wk.	per wk.	per wk.	per wk.
<b>Office Occupations, Male—</b>						
Bookkeeper, senior.....	97	104	107	108	114	119
Clerk, intermediate.....	76	76	77	88	86	88
Clerk, senior.....	98	102	97	113	112	117
Order clerk.....	76	79	74	81	83	93
Draughtsman, intermediate.....	91	90	83	99	96	114
Draughtsman, senior.....	113	108	108	120	116	136
<b>Office Occupations, Female—</b>						
Clerk, intermediate.....	59	63	64	69	70	72
Machine Operator—						
Bookkeeping.....	58	60	59	61	60	64
Calculating.....	61	62	56	62	60	69
Payroll clerk.....	63	73	67	72	67	73
Secretary, senior.....	79	83	75	88	80	85
Stenographer, junior.....	54	60	58	62	58	60
Stenographer, senior.....	67	72	68	72	68	72
Switchboard operator and receptionist.....	54	57	56	61	56	63
Typist, junior.....	50	52	52	54	53	55
Typist, senior.....	59	56	59	64	63	66

<sup>1</sup> "Other Industries" consists of logging; mining; transportation (all sectors including air transportation), storage and communication (including radio and TV); public utilities; trade; finance; and government and personal service.

Table 25 gives summary data on working conditions of plant and office employees in manufacturing industries and all industries for the years 1963-65. The percentages in this table denote the proportions that employees—plant or office—of establishments reporting specific items bear to the total number of all such employees in all establishments replying to the survey; they are not necessarily the proportions of employees actually covered by the various items. Further details and additional information are given in the annual report *Working Conditions in Canadian Industry*, compiled and published by the Department of Labour and based on a survey at May 1 each year of some 30,000 reporting units.

25.—Summary of Selected Working Conditions of Non-office and Office Employees  
in Manufacturing and All Industries, 1963-65

Item	1963		1964		1965	
	Manu- facturing Industries	All Industries	Manu- facturing Industries	All Industries	Manu- facturing Industries	All Industries
COVERAGE						
Non-office Employees— Reporting establishments... No. Employees..... “	8,494 853,647	19,830 1,541,163	8,718 892,462	19,057 1,622,929	8,993 922,557	20,592 1,976,551
Office Employees— Reporting establishments... No. Employees..... “	8,213 263,814	18,176 681,658	8,408 275,719	19,260 718,718	8,040 290,343	18,949 952,434
PERCENTAGES OF NON-OFFICE EMPLOYEES						
Standard Weekly Hours—						
40 and under.....	75	71	76	71	77	76
Over 40 and under 44.....	8	7	7	6	7	4
44.....	3	6	3	6	2	4
45.....	7	5	8	6	7	5
Over 45 and under 48.....	1	1	1	1	1	1
48.....	3	5	3	5	3	5
Over 48.....	3	3	2	3	3	3
Employees on a five-day week.....	91	83	92	83	92	86
Vacations with Pay—						
Two weeks.....	88	86	89	87	89	82
After: 1 year or less.....	25	35	25	35	20	38
2 years.....	11	18	11	13	11	17
3 years.....	27	17	23	13	29	16
4-5 years.....	24	16	25	16	19	11
Other periods.....	1	—	—	—	1	—
Three weeks.....	74	74	75	75	77	77
After: Less than 10 years.....	8	14	8	15	15	27
10 years.....	22	20	25	22	25	20
11-14 years.....	10	7	9	7	12	7
15 years.....	31	30	29	23	23	21
20 years.....	2	2	3	2	2	1
Other periods.....	1	1	1	1	1	1
Four weeks.....	40	47	41	47	47	52
After: Less than 25 years.....	15	16	18	19	26	23
25 years.....	23	28	21	26	19	22
More than 25 years.....	2	3	2	2	2	2
Vacations that do not increase with length of service.....	11	11	10	11	9	11
1 week.....	6	5	5	5	5	4
2 weeks.....	5	6	5	6	4	6
Paid Statutory Holidays.....	95	93	96	93	96	94
1-5.....	6	6	5	5	4	4
6.....	5	5	5	5	9	4
7.....	10	14	8	13	9	11
8.....	53	40	56	42	51	35
9.....	13	20	19	20	20	21
More than 9.....	3	8	3	3	8	19

**25.—Summary of Selected Working Conditions of Non-office and Office Employees  
in Manufacturing and All Industries, 1963-65—concluded**

Item	1963		1964		1965	
	Manu- facturing Industries	All Industries	Manu- facturing Industries	All Industries	Manu- facturing Industries	All Industries
PERCENTAGES OF OFFICE EMPLOYEES						
Standard Weekly Hours—						
Under 37½.....	29	34	32	34	30	33
37½.....	43	35	41	36	42	37
Over 37½ and under 40.....	6	5	5	5	7	4
40.....	19	22	20	22	19	24
Over 40.....	3	4	2	3	2	2
Employees on a five-day week.....	97	95	97	96	97	97
Vacations with Pay—						
Two weeks.....	93	92	93	92	93	77
After: 1 year or less.....	85	86	87	86	85	72
2 years.....	5	4	4	4	5	3
3 years.....	1	1	1	1	2	1
5 years.....	1	1	1	1	1	1
Other periods.....	1	—	—	—	—	—
Three weeks.....	85	87	86	87	87	90
After: Less than 10 years.....	9	24	10	25	22	48
10 years.....	35	28	39	31	33	22
11-14 years.....	13	7	12	6	13	5
15 years.....	26	26	23	23	17	16
20 years.....	1	1	1	1	1	1
Other periods.....	1	—	1	1	1	1
Four weeks.....	50	59	52	60	60	70
After: Less than 25 years.....	16	16	20	20	34	37
25 years.....	31	38	29	36	23	30
More than 25 years.....	3	5	3	4	3	3
Vacations that do not increase with length of service.....	6	6	6	6	6	5
1 week.....	1	—	1	1	1	—
2 weeks.....	5	5	5	4	5	4
3 weeks.....	—	1	—	1	—	1
Paid Statutory Holidays.....	99	99	100	99	99	99
1-6.....	4	3	3	3	3	2
7.....	7	12	5	10	4	7
8.....	59	40	62	37	56	31
9.....	24	26	24	27	26	20
More than 9.....	5	18	6	22	10	39

**Wages of Farm Labour.**—The information on farm wages is provided by volunteer farm correspondents located in all provinces except Newfoundland. The rates presented in Table 26 are average wages paid to all farm help regardless of age and skill. Because the rates reported may cover a wide range of skills, of types of work and of ages of hired workers, the value of the resulting data is considered to be an indicator of trends rather than a measure of absolute wage levels. No attempt has been made to have the wage rates reflect such perquisites as separate housing accommodation, fuel, electricity and food which, under some conditions of hiring, are supplied by employers to their hired farm help.



### 26.—Average Daily and Monthly Wages of Male Farm Help as at Jan. 15, May 15 and Aug. 15, 1965-66

NOTE.—Figures from 1940 are given in the corresponding table of previous Year Books beginning with the 1943-44 edition.

Province and Year	January 15				May 15				August 15			
	Daily		Monthly		Daily		Monthly		Daily		Monthly	
	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
<b>Maritime Provinces—</b>												
1965.....	5.50	6.90	121.00	156.00	5.60	7.10	120.00	152.00	5.90	7.40	118.00	149.00
1966.....	6.00	7.70	129.00	165.00	6.60	7.80	129.00	179.00	6.20	8.00	129.00	168.00
<b>Quebec—</b>												
1965.....	6.60	8.50	128.00	174.00	6.70	8.50	131.00	171.00	6.90	8.90	132.00	183.00
1966.....	7.00	8.90	135.00	181.00	7.20	8.80	144.00	186.00	7.50	9.80	138.00	191.00
<b>Ontario—</b>												
1965.....	6.90	8.70	137.00	185.00	7.50	9.10	148.00	195.00	8.00	10.00	153.00	216.00
1966.....	7.60	9.70	170.00	218.00	8.10	9.90	182.00	236.00	8.40	10.80	171.00	239.00
<b>Manitoba—</b>												
1965.....	6.80	8.50	123.00	170.00	7.20	9.20	155.00	194.00	8.00	10.20	163.00	203.00
1966.....	7.30	9.20	138.00	185.00	8.20	10.20	176.00	218.00	8.40	10.60	182.00	232.00
<b>Saskatchewan—</b>												
1965.....	6.80	8.50	127.00	168.00	8.00	10.00	171.00	212.00	9.00	10.70	180.00	218.00
1966.....	7.60	9.70	144.00	188.00	9.00	11.20	200.00	238.00	9.50	11.30	199.00	243.00
<b>Alberta—</b>												
1965.....	6.90	8.80	143.00	190.00	7.80	9.90	170.00	216.00	8.10	10.40	175.00	220.00
1966.....	7.80	9.90	160.00	211.00	9.00	11.20	190.00	243.00	9.00	11.30	189.00	241.00
<b>British Columbia—</b>												
1965.....	8.00	10.20	160.00	233.00	8.40	10.60	175.00	242.00	8.80	10.80	185.00	256.00
1966.....	8.80	10.50	172.00	249.00	9.80	11.50	195.00	275.00	9.00	11.60	195.00	267.00
<b>Totals—</b>												
1965.....	6.40	8.20	135.00	183.00	7.00	8.80	154.00	198.00	7.60	9.60	159.00	208.00
1966.....	7.00	9.00	150.00	199.00	7.80	9.50	174.00	224.00	8.10	10.40	175.00	229.00

## Section 5.—Unemployment Insurance

**Unemployment Insurance.\***—During the depression of the 1930s the need for a nation-wide unemployment insurance program became recognized. In 1935 the Employment and Social Insurance Act was passed by the Federal Parliament but was subsequently declared invalid by the Privy Council. Later, by consent of the provinces, an amendment to the British North America Act was obtained empowering the Federal Parliament to

\* Prepared by the Unemployment Insurance and Pensions Section, Labour Division, Dominion Bureau of Statistics; statistics of unemployment insurance are compiled and published by the DBS from material supplied by the Unemployment Insurance Commission.

legislate on unemployment insurance and in 1940 the Unemployment Insurance Act was passed, making provision for a compulsory contributory unemployment insurance program at the national level and also for the establishment of a national employment service to operate in conjunction with and ancillary to the unemployment insurance operations. The Act came into effect on July 1, 1941; amended on several occasions, it was replaced by a new Unemployment Insurance Act, effective Oct. 2, 1955.\* On Apr. 1, 1965, the operation of the National Employment Service was transferred to the Department of Labour and on Jan. 1, 1966 to the Department of Manpower and Immigration (see pp. 731-732).

Legislation provides for a compulsory insurance program administered by the Federal Government, and requires employers to join with their insurable employees and the Government in building up a fund. This fund is held in trust by the Unemployment Insurance Commission for the payment of benefit to eligible unemployed persons. The Act is administered by a Commission of three persons appointed by the Governor in Council, of whom one is the Chief Commissioner; one Commissioner, other than the Chief Commissioner, is appointed after consultation with employer organizations and the other after consultation with employee organizations.

The Unemployment Insurance Act applies to all persons employed under a contract of service,† except: the Canadian Armed Forces; the permanent public service of the Federal Government; provincial government employees except where insured with the concurrence of the government of the province; certified permanent employees of municipal or public authorities; hunting and trapping; private domestic service; private-duty nursing; teaching; workers on other than an hourly, daily or piece rate earning more than \$5,460 a year effective Sept. 27, 1959, unless they elect to continue as insured persons; employees in a charitable institution or in a hospital not carried on for purpose of gain except where the institution or hospital consents to insure certain groups or classes of persons with the concurrence of the Commission. All persons paid by the hour, day, or at a piece rate (including a mileage rate) are insured regardless of amount of earnings.

The amount of the employee contribution is determined by the employee's weekly earnings; an equal contribution is required from the employer. The Federal Government contributes one fifth of the aggregate employer-employee contribution and defrays administrative expenses. Contributions became payable on July 1, 1941. Benefit became payable on Jan. 27, 1942 and by Mar. 31, 1966 a total of \$5,107,000,000 had been paid.

The following statement shows the current weekly rates of contribution and benefit effective Sept. 27, 1959. The weekly contribution is based on actual earnings in the week, irrespective of the number of days worked. The benefit rates are calculated on the average weekly contributions for the last 30 weeks in the 104 weeks preceding claim. In order to qualify for regular benefit, a claimant must have at least 30 weekly contributions in the last 104 weeks prior to claim, eight weekly contributions since the start of the last preceding regular benefit period or in the last year prior to claim, whichever is the shorter period, and 24 weekly contributions since the start of the last preceding benefit period, or in the year prior to the claim, whichever is the longer period.

\* Copies of the 1955 Act incorporating subsequent amendments are available from the Queen's Printer, Ottawa (Catalogue No. YX92-222/50).

† Commencing Apr. 1, 1957, coverage was extended to persons engaged in fishing, notwithstanding the fact that such persons are not employees of any other person but are usually self-employed; commencing Apr. 1, 1967, coverage is extended to employees engaged in agriculture and horticulture.

## WEEKLY RATES OF CONTRIBUTION AND BENEFIT UNDER THE UNEMPLOYMENT INSURANCE ACT, IN EFFECT FROM SEPT. 27, 1959

NOTE.—Weekly rates in effect from Oct. 2, 1955 to Sept. 26, 1959 are given in the 1962 Year Book, p. 738.

Range of Weekly Earnings	Weekly Employee Contribution	Range of Average Weekly Contributions	Weekly Rates of Benefit		Earnings not Deducted	
			Person Without Dependant	Person With Dependant	Person Without Dependant	Person With Dependant
	cts.	cts.	\$	\$	\$	\$
Under \$9.....	10 <sup>1</sup>	Under 25.....	6	8	3	4
\$ 9 and under \$15.....	20	25 and under 34.....	9	12	5	6
15 " " 21.....	30	34 " " 42.....	11	15	6	8
21 " " 27.....	38	42 " " 50.....	13	18	7	9
27 " " 33.....	46	50 " " 57.....	15	21	8	11
33 " " 39.....	54	57 " " 63.....	17	24	9	12
39 " " 45.....	60	63 " " 69.....	19	26	10	13
45 " " 51.....	66	69 " " 75.....	21	28	11	14
51 " " 57.....	72	75 " " 82.....	23	30	12	15
57 " " 63.....	78	82 " " 90.....	25	33	13	17
63 " " 69.....	86	90 or over.....	27	36	14	18
69 or over.....	94					

<sup>1</sup> A half stamp.

The Act contains a special provision whereby the regular contribution requirements are relaxed somewhat during a 5½-month period commencing with the first week of December each year. Under this provision, claimants unable to fulfil the contribution requirements for regular benefit may draw "seasonal benefit" if they have at least 15 contribution weeks during the fiscal year or, failing this, if they terminated regular benefit since the previous mid-May.

*Statistics on the Operation of the Act.*—In order to assess the impact of changing economic conditions on the insurance program, provision is made for collection of current operational data, such as claims filed and processed and payments made. This information is published monthly in the *Statistical Report on the Operation of the Unemployment Insurance Act* (Catalogue No. 73-001). Current claims and payment data are useful for administrative purposes and are also a source of information to the public regarding financial and other aspects of the program.

Persons wishing to draw benefit must file either an initial or a renewal claim. Where it is necessary to compute entitlement to benefit, an initial claim is taken, otherwise a renewal. In the main, initial and renewal claims combined are an approximation of recorded separations from employment during a month. However, if a claimant exhausts his benefit and wishes to be reconsidered for further benefit, an initial claim is required. Such claims, accounting for approximately 15 p.c. of the monthly volume in 1965, are not new cases of disemployment. The count of claimants at the month-end indicates the extent to which claimants maintain contact with local offices of the Commission.



## 27.—Amount Paid, 1956-65, and Claims Filed, Claimants and Amount Paid, by Month, 1965

Year	Amount Paid	Month	Initial and Renewal Claims Filed	Claimants at Month-End	Amount Paid
	\$'000		'000	'000	\$'000
		<b>1965</b>			
1956.....	210,330	January.....	230	548	39.8
1957.....	305,076	February.....	160	559	45.3
1958.....	492,901	March.....	183	539	55.6
1959.....	406,097	April.....	151	463	43.3
1960.....	481,836	May.....	93	229	31.7
		June.....	72	181	16.2
1961.....	493,971	July.....	86	184	11.8
1962.....	409,208	August.....	84	172	12.8
1963.....	394,163	September.....	72	157	11.5
1964.....	344,390	October.....	83	170	10.2
1965.....	312,110	November.....	152	245	12.6
		December.....	262	418	21.2

In addition to the monthly data published on the operation of the Unemployment Insurance Act, annual tabulations are compiled regarding persons employed in insurable employment and benefit periods established and terminated. These data are published in the annual report *Benefit Periods Established and Terminated under the Unemployment Insurance Act* (Catalogue No. 73-201). Data on persons insured under the Act are obtained from a 10-p.c. sample of insurance books and contribution cards renewed at June 1 each year. Included are persons engaged in insurable employment as well as persons on claim at that date.

## 28.—Persons Insured under the Unemployment Insurance Act, by Industrial Group and Sex, 1964 and 1965

NOTE.—Based on a 10-p.c. sample of contributors and claimants at June 1.

Industry	1964		1965	
	Males	Females	Males	Females
	No.	No.	No.	No.
Agriculture.....	11,840	1,930	9,430	1,770
Forestry (mainly logging).....	80,320	1,880	73,270	2,270
Fishing and trapping.....	27,610	260	21,380	150
Mines (including milling), quarries, oil wells.....	100,010	4,420	101,410	4,110
Manufacturing.....	1,055,290	376,710	1,145,930	390,370
Construction.....	320,890	9,370	325,700	9,680
Transportation, communication and other utilities.....	352,260	70,770	367,070	70,520
Trade.....	471,000	289,690	467,920	300,670
Finance, insurance, real estate.....	61,830	120,950	69,290	124,560
Community, business and personal service.....	222,610	266,330	224,790	265,400
Public administration and defence.....	135,260	32,880	125,480	31,720
Industry unspecified or undefined.....	102,440	53,290	89,330	34,330
<b>Totals, All Industries.....</b>	<b>2,941,360</b>	<b>1,228,480</b>	<b>3,021,000</b>	<b>1,235,550</b>

*Benefit.*—The duration of regular benefit is related to the contribution history—one week's benefit for every two weeks' contributions in the past 104 weeks with a maximum of 52 weeks. However, contributions more than one year old cannot be used if they have already been taken into account in computing previous rights. Disqualifications for benefit include: loss of work owing to a labour dispute in which the contributor is participating or directly interested; unwillingness to accept suitable employment; being an inmate of any prison or any institution supported out of public funds; refusal to attend a course of instruction or training if directed to do so; residence outside Canada unless

otherwise prescribed. Disqualification of a claimant for a period not exceeding six weeks may be imposed if an employee is discharged by reason of his own misconduct or leaves the employment voluntarily without just cause or refuses suitable employment.\*

Table 29 distributes regular benefit periods terminated by province and shows average weeks and average dollar benefit paid on these terminations. A claimant establishes a *regular benefit period* when he submits his claim in the prescribed manner and proves he has fulfilled the minimum contribution requirements. The duration of benefit and the weekly rate authorized, comprising total entitlement, are then calculated and the claimant's benefit may be drawn upon during successive intervals of unemployment. His benefit period terminates either when he has exhausted the amount authorized or when 12 months have elapsed since he established, whichever comes first.

\*This list should not be considered exhaustive; more detail may be obtained from the Unemployment Insurance Act and Regulations.

### 29.—Regular Benefit Periods Terminated, Duration and Average Amount of Benefit Paid, by Province, 1964 and 1965

NOTE.—Based on a 20-p.c. sample.

Province	1964			1965		
	Benefit Periods Terminated	Average Weeks Paid on Termination	Average Amount Paid on Termination	Benefit Periods Terminated	Average Weeks Paid on Termination	Average Amount Paid on Termination
	No.	No.	\$	No.	No.	\$
Newfoundland.....	21,835	14.4	380	20,500	15.1	393
Prince Edward Island.....	3,770	14.9	327	4,000	14.5	337
Nova Scotia.....	35,010	13.6	323	32,305	13.2	321
New Brunswick.....	31,090	13.6	325	30,320	14.0	345
Quebec.....	253,340	12.6	323	221,730	12.8	333
Ontario.....	277,595	11.1	282	229,940	12.1	305
Manitoba.....	32,815	13.0	325	25,105	14.2	358
Saskatchewan.....	21,980	12.9	327	16,960	14.4	369
Alberta.....	46,955	11.7	306	33,775	12.5	324
British Columbia.....	88,080	11.8	309	80,100	11.7	310
<b>Totals.....</b>	<b>812,470</b>	<b>12.1</b>	<b>308</b>	<b>694,735</b>	<b>12.7</b>	<b>324</b>

Table 30 gives provincial distributions of seasonal benefit periods in 1964 and 1965, average weeks and average benefit paid.

### 30.—Seasonal Benefit Periods, Duration of Benefit and Amount Paid, by Province, 1964 and 1965

NOTE.—Based on a 10-p.c. sample.

Province	1964			1965		
	Benefit Periods	Average Weeks Paid	Average Amount Paid	Benefit Periods	Average Weeks Paid	Average Amount Paid
	No.	No.	\$	No.	No.	\$
Newfoundland.....	27,810	13.0	310	26,210	12.8	306
Prince Edward Island.....	5,310	12.4	276	5,065	12.8	304
Nova Scotia.....	22,360	11.1	261	21,025	10.9	258
New Brunswick.....	24,740	11.2	255	24,325	11.0	259
Quebec.....	96,345	9.4	227	84,190	9.1	223
Ontario.....	74,050	9.0	210	67,000	8.9	208
Manitoba.....	12,880	9.2	225	11,590	9.1	222
Saskatchewan.....	9,670	9.0	217	9,430	9.0	216
Alberta.....	14,240	8.4	210	12,425	8.3	205
British Columbia.....	29,670	9.7	250	28,560	9.3	245
<b>Totals.....</b>	<b>317,075</b>	<b>9.9</b>	<b>237</b>	<b>289,820</b>	<b>9.7</b>	<b>235</b>

## Section 6.—Employment Injuries and Workmen's Compensation

**Fatal Employment Injuries.**—Data on fatal employment injuries, compiled by the federal Department of Labour, are obtained from provincial Workmen's Compensation Boards, from the Board of Transport Commissioners and other government authorities, and from press reports. Of the 1,263 fatal injuries to industrial workers that occurred during 1965, 332 were the result of the victims being struck by objects—73 by landslides or cave-ins, 56 by falling trees or limbs, 29 by materials falling from stockpiles or loads, and the remainder by other objects. Collisions, derailments, wrecks, etc., were responsible for 276 fatalities, falls and slips for 244, and 121 fatalities were included in the classification "caught in, on or between objects, vehicles, etc.". There were 92 deaths caused by inhalation, absorption, ingestion and industrial diseases, 86 by conflagration, temperature extremes, explosions, 60 by contact with electric current, five by over-exertion, strain, etc., and nine by striking against or stepping on objects. The remainder were the result of miscellaneous accidents.

### 31.—Fatal Employment Injuries, by Industry, 1962-65

Industry	Numbers				Percentages of Total			
	1962	1963	1964	1965 <sup>a</sup>	1962	1963	1964	1965 <sup>a</sup>
Agriculture.....	62	49	72	50	5.5	4.0	5.4	4.0
Forestry.....	127	122	155	105	11.2	9.9	11.7	8.3
Fishing and trapping.....	12	34	37	40	1.0	2.8	2.8	3.1
Mining, quarrying and oil wells.....	151	163	161	164	13.3	13.2	12.2	13.0
Manufacturing.....	216	222	235	213	19.0	18.0	17.8	16.9
Construction.....	204	234	252	263	18.0	19.0	19.1	20.8
Transportation, communication and other utilities.....	209	210	237	279	18.4	17.0	18.0	22.1
Trade.....	58	61	62	64	5.1	4.9	4.7	5.1
Finance, insurance and real estate.....	2	1	2	3	0.2	0.1	0.2	0.2
Service.....	16	28	55	35	1.4	2.3	4.2	2.8
Public administration.....	78	109	52	47	6.9	8.8	3.9	3.7
<b>Totals.....</b>	<b>1,135</b>	<b>1,233</b>	<b>1,320</b>	<b>1,263</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

**Workmen's Compensation.\***—In all provinces legislation is in force providing for payment of compensation to workmen who are injured by accident arising out of and in the course of their employment or who are disabled as a result of a specified industrial disease. To be entitled to benefits, a workman must be employed in an industry covered by the Act at the time of the injury. Compensation is not payable, however, where the disability lasts less than a stated number of days (varying from one to four in the provincial Acts), or if the injury is due to the workman's own misconduct. A workman who is entitled to compensation has no right of action against his employer for injury sustained during employment.

The Acts provide for a compulsory system of collective liability on the part of employers. Industries covered are divided into classes or groups, according to hazard. Employers are required to contribute to the Accident Fund at a rate fixed in accordance with the accident experience of the class or group. Each class is liable for the costs of all accidents occurring in that class.

The laws apply to enumerated employments but the range of industries covered by each Act is very wide. The principal exceptions are farm workers (who are not covered except in Ontario), domestic servants, casual workers, employees of financial, insurance and professional undertakings, employees of non-profit religious or charitable organizations, and workers in certain service industries in most provinces, for example, barber shops and

\* More detailed information is given in the Department of Labour publication *Workmen's Compensation in Canada, A Comparison of Provincial Laws*.



beauty parlours. Small undertakings, i.e., those with fewer than a specified number of employees, are exempted from the Act in some provinces. Excluded employments may generally be brought under the Act on the voluntary application of the employer.

Benefits for disability are based on 75 p.c. of earnings, subject to an annual ceiling. Where disability is permanent, a life pension is paid, irrespective of future earnings. Medical benefits are provided without limitation, regardless of a waiting period, and rehabilitation services are available where necessary. Where death results from an employment injury, fixed monthly payments are made to dependants.

A federal Act provides for compensation for accidents to Federal Government employees according to the scale of benefits provided by the Act of the province in which the employee is usually employed. Seamen who are not under a provincial Workmen's Compensation Act are entitled to compensation under the federal Merchant Seamen Compensation Act.

### 32.—Employment Injuries Reported and Compensation Paid by Workmen's Compensation Boards, 1964

Province	Employment Injuries Reported					Compensation Paid <sup>2</sup>
	Medical Aid Only <sup>1</sup>	Temporary Disability	Permanent Disability	Fatal	Total	
	No.	No.	No.	No.	No.	\$
Newfoundland.....	5,174	3,637	76	13	8,900	2,130,167
Prince Edward Island.....	1,288	972	11	3	2,274	392,906
Nova Scotia.....	12,866	8,478	303	33	21,680	5,428,485
New Brunswick.....	11,413	9,967	189	36	21,605	4,105,259
Quebec.....	..	..	..	313	143,969	32,848,610 <sup>3</sup>
Ontario.....	205,953	83,884	2,999	291	293,127	67,285,827 <sup>3</sup>
Manitoba.....	14,364	11,042	452	39	25,897	9,730,266
Saskatchewan.....	14,339	9,484	183	57	24,063	5,319,266
Alberta.....	32,179	22,168	817	113	55,277	12,070,924
British Columbia.....	49,641	24,869	1,234	155	75,899	24,211,268
<b>Totals.....</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>1,053</b>	<b>672,691</b>	<b>163,522,978</b>

<sup>1</sup> Injuries requiring medical treatment but not causing disability for a sufficient period to qualify for compensation; the period varies in the several provinces.

<sup>2</sup> Includes, except where noted otherwise, payments to compensate loss of earnings, medical aid payments, cost of rehabilitation and hospitalization (not including capital expenditures) and pensions paid (not pensions awarded) for temporary and permanent disabilities.

<sup>3</sup> Excludes payments by employers who make direct compensation to their employees; such employees come under Schedule I of the Ontario and Quebec Workmen's Compensation Acts.

## Section 7.—Organized Labour in Canada

### HISTORY OF THE LABOUR MOVEMENT IN CANADA\*

Canadian trade union history goes back at least 150 years. There were unions of skilled workers in Saint John, N.B., during the War of 1812, and the ferociously anti-union Nova Scotia Act of 1816 complains that "great numbers of . . . Journeymen and Workmen, in the Town of Halifax, and other parts of the Province have, by unlawful Meetings and Combinations, endeavoured to regulate the rate of wages, and to effectuate illegal purposes". From the prohibitions the Act contains, it is clear that the "Combinations" had been doing almost everything a modern union does in pursuit of collective bargaining, and with some success. There is evidence also of unions of printers in Quebec City in 1827 and 1836, in York (Toronto) and Hamilton in 1833, and somewhere in Nova Scotia (probably Halifax) in 1837; shoemakers in Montreal in the 1830s and in Hamilton between 1827 and 1842; carpenters in Montreal in 1834, and stonecutters in 1844; carpenters, cabinet makers, blacksmiths, foundrymen, hammermen, painters, bakers, shoemakers, tailors and "horolo-

\* Prepared by Dr. Eugene Forsey, Director of Research, Canadian Labour Congress, Ottawa.

gers" in Saint John in 1840; seamen in Quebec City in 1847; shipwrights and caulkers in Kingston in 1848-50; carpenters, cabinet makers, blacksmiths and foundrymen, painters, masons and stonecutters, shipwrights, riggers and sailmakers, longshoremen, sawmill men, millers, bakers, shoemakers, tailors, and printers in Saint John in 1853; longshoremen in Quebec City in 1857, and sailmakers in 1858; moulders in Brantford in 1859; and bakers in Victoria in 1859. Most of these early unions were probably short-lived but the Montreal Stonecutters, the Quebec Ship Labourers (longshoremen) and the Saint John Shipwrights lasted well into the present century; the present Toronto Typographical Union goes back to 1844, and the Saint John Longshoremen to 1849.

Before 1859, all the unions seem to have been purely local, except for the Amalgamated Society of Engineers (ASE), a British union that established its first Canadian branch in Montreal in 1853, a second in Hamilton in 1857, and two more (Toronto and Brantford) in 1858. But from 1859 on, Canadian unionism became steadily more and more 'international', that is, more and more of its members belonged to unions with their headquarters and the bulk of their membership in another country. The ASE was followed, during the 1860s, by several organizations with headquarters in the United States—the Moulders (1859), the Locomotive Engineers (1864), the Typographical Union (1865), the Knights of St. Crispin (shoemakers) (1868), and the Cigar Makers (1869); the Coopers also may have arrived before 1871. The 1870s brought the Amalgamated Society of Carpenters and Joiners (British) (1871), the Bricklayers and Masons (1872), the Friendly Society of Carpenters (British) (1875), the Locomotive Firemen (1876), and probably the Knights of Labor (1879), and the 1880s brought the Railway Conductors (1881), the American Brotherhood of Carpenters (1882), the Railroad Trainmen (1885), and the Painters and Decorators (1887). British and American immigrants brought some of these with them; others were invited by Canadian local unions that wanted to be part of something bigger and stronger, and whose members wanted to be able to move freely to jobs in the United States when times were hard in Canada.

Nevertheless, during the 1860s, 1870s and 1880s, Canadian workers continued to form purely local or provincial unions. There were provincial organizations of shoemakers in Ontario and coal miners in Nova Scotia; there were local unions of occupations as diverse as seamen, sailmakers, shipwrights, caulkers, riggers, longshoremen, wharf porters, truckmen, hackmen, bricklayers, masons, stonecutters, carpenters, plasterers, painters, plumbers, tinsmiths, boilermakers, carriage makers, saddle makers, harness makers, trunk makers, cabinet makers, chair makers, varnishers and polishers, coopers, boltmakers, brushmakers, bricklayers' labourers, labourers, tailors, hatters, bakers, bookbinders, and in places as widely scattered as Halifax, Charlottetown, Saint John, Quebec, Montreal, Ottawa, Toronto, Hamilton, London, St. Catharines and Victoria.

For many years the various unions, even in the same city or town, had very little to do with each other. But in December 1863 several Hamilton unions formed a central Trades Union or Trades Assembly, a body made up of delegates from the constituent unions, which lasted till at least 1875. This was followed by the Toronto Trades Assembly (1871-78), the Ottawa Trades Council (1872-76) and the St. Catharines Trades Assembly (1875). In 1873, moreover, the Toronto Assembly called a national convention. By that time, there must have been upwards of a hundred unions in the country but the convention had delegates from only 31 locals of 14 unions, all in Ontario (although the Typographical Unions in Montreal and Quebec sent letters of approval). This convention set up the first national central organization, the Canadian Labor Union, which met again in 1874, 1875, 1876 and 1877. The depression of the 1870s, however, was fatal to both the local and national central bodies, although many of the local unions, especially the branches of the internationals, survived.

Meanwhile, the infant Canadian labour movement had won a resounding and decisive legislative victory in the Toronto printers' strike of 1872, part of the nine-hours movement. Most of the Toronto master-printers, headed by George Brown of the *Globe*, were fiercely anti-union. They had 13 leading members of the Typographical Union committee arrested on a charge of seditious conspiracy. Labour had assumed unions were lawful but it now



found they were not. British Acts freeing them of their Common Law disabilities did not extend to Canada so that Ontario unions in 1872 were in the same legal position as British unions in 1791. They promptly set to work to get Canadian legislation to match the British. Sir John A. Macdonald, delighted at the opportunity to "dish the Liberals" with two pieces of unimpeachably Gladstonian legislation, lost no time in passing through the Dominion Parliament a Trade Unions Act and a Criminal Law Amendment Act (1872) modelled on the British Acts of the previous year. This was the first big piece of successful political action by Canadian unions. The prosecution was dropped and the strike was won.

With the adoption of the National Policy (1879) and the construction of the Canadian Pacific Railway (1881-85), Canadian industry began to revive and grow and the unions revived and grew with it. The 1880s saw not only the organization of a host of purely local unions, most of them short-lived, but also the entry of several new international unions including, besides those already mentioned, the Order of Railway Telegraphers (1888) and the Plasterers and Cement Masons (1889). The railway running trades organizations (Engineers, Firemen, Conductors and Trainmen), which in 1880 had had only about a dozen locals, by 1890 had about 100; in 1880 they had been confined almost wholly to Ontario but by 1890 nearly half their locals were in other provinces, divided almost equally between the Maritimes, Quebec and the West. The building trades also had only about a dozen locals in 1880, again nearly all in Ontario and, by 1890, they had about 60, rather more than half of them in other provinces, more particularly the West and Quebec.

But the most spectacular feature of the 1880s was the appearance and growth of the Knights of Labor. Actually, the Knights (which started in the United States but spread to Canada, Britain, Belgium, Australia and New Zealand) had formed one Local Assembly in Canada before 1880 but this had withered on the vine and their Canadian history really began in Hamilton in the fall of 1881. Within a decade they had organized well over 300 local Assemblies in more than 100 cities, towns and villages in every province except Prince Edward Island and what is now Saskatchewan. Many of these were short-lived, few surviving the turn of the century, but in 1886 there must have been 160 and in 1887 close to 200.

What is more, the Knights were mainly responsible for the organization of the unskilled, men and women (of which there had previously been very little) and of small town workers. Nor did they neglect the skilled; their first big effort in Canada was organizing 30 Local Assemblies of telegraphers, from Winnipeg to North Sydney, as part of their "National Trade District 45, United Telegraphers of North America". This body, in the summer of 1883, conducted the one genuinely international strike in North American history, against the big telegraph companies on both sides of the border. The strike failed and the Canadian Telegraphers' Assemblies disappeared but the Knights went on to organize almost every conceivable craft, from carpenters to watch-case makers, from stonecutters to musicians. They also organized a great number of "mixed" Assemblies that took in all occupations, skilled and unskilled, and were specially adapted to the needs of small towns where there were not enough workers of any one occupation to make a sizable trade union. The cities and larger towns had their share of Assemblies (in 1887 Toronto had about 50, Montreal over 20, Quebec City perhaps a dozen, Hamilton 15) but there were also single Assemblies, usually mixed, in dozens of small places.

With the fresh burst of organizing activity came a revival of the central organizations, both local and national. Significantly, the new local central bodies almost invariably called themselves "Trades and Labor Councils"; the "trades" were making room for the unskilled. The Toronto Council was formed in 1881 and was followed by Halifax (1882), Hamilton and London (1883), Guelph (1885), Montreal, Oshawa, Brantford and St. Thomas (1886), Winnipeg (1887), and Ottawa, St. Catharines, Peterborough, Vancouver and Victoria (1889). The new national central body, known initially as the "Canadian Labor Congress" but from 1886 on as the Trades and Labor Congress (TLC), was set up in 1883 by a convention summoned by the Toronto Council and for some years was, in fact, an almost wholly Ontario body. The first convention had no delegates from any other prov-



ince; the second, in 1886, had one from Quebec but in 1887 and 1888 the delegates were again all from Ontario. From 1889 on, however, there was always a substantial delegation from Quebec. In 1890, the first western delegates appeared (from British Columbia), and in 1897 the first from the Maritimes (New Brunswick). Until the turn of the century, however, the Congress remained a predominantly Ontario and Quebec organization, not only because most of the unions and the Knights of Labor Assemblies were in those provinces, but because the railway running trades almost invariably held aloof, and because unions and Assemblies were usually too poor to send delegates more than a short distance from home.

From 1880 until the beginning of the twentieth century, the Canadian labour movement was comprehensive, inclusive; the Congress was prepared to accept every kind of genuine labour organization there was—craft or industrial, skilled or unskilled, local, regional, national or international. Even so, its strength was not impressive. In 1901, the Secretary-Treasurer reported that of 871 organizations in the country, only 133, with a total membership of 8,381, had affiliated; and total Congress expenditures in that year were only \$809.88. It was not until the next year that the Congress engaged “the services of a stenographer and typewriter”, which “necessitated the fitting up of a small office with two desks and a chair”.

In these circumstances, it might have been supposed that the policy of taking in everybody would have continued. But in 1896, Canadian trade unionism had to face, for the first time, the problem of reconciling continental solidarity with Canadian autonomy. Most of the TLC affiliates were locals of international organizations but it had confined itself almost wholly to legislative activities and seems to have had no formal contact with the American Federation of Labor (AFL). But in 1896, it complained to the AFL about the application of the American Alien Contract Labor Act to Canadian workers and the ensuing correspondence led, in 1899, to an exchange of fraternal delegates which lasted as long as the Congress.

Meanwhile, the Knights of Labor, which in the late 1880s and early 1890s had played a dominant part in the Congress (supplying the majority of the delegates at the conventions of 1887-89, 1891, 1893 and 1894 and holding the Congress presidency from 1886 to 1891, and in 1894 and 1895), had dwindled to very small proportions in Canada and to almost nothing in the United States. The AFL, on the other hand, was becoming more and more powerful and its unions in Canada more and more numerous and influential. With the turn of the century, they felt in a position to put pressure on the Congress to throw out all organizations “dual” to (rivals of) AFL unions and in 1902 the Congress complied. It lost 23 organizations; it kept nearly 200. There were over 1,000 unions in the country—more than 500 in Ontario, about 160 in British Columbia, slightly fewer in Quebec, about 140 in the Maritimes and nearly 70 on the Prairies.

By its action in 1902, the Congress ranged itself definitely on the side of international unionism. It did not, however, by any means accept the subordinate role the AFL repeatedly tried to impose on it. From 1897 on, it kept trying to get the international unions, or the AFL on their behalf, to turn over to the Congress the dues these unions paid the AFL on their Canadian membership. It finally solved this problem by getting the international unions to affiliate their Canadian membership direct, which they began to do in 1906. The AFL persisted, right down to 1955, in chartering local unions in Canada. It also made repeated unsuccessful attempts to deny the TLC the sole right to charter local Trades and Labor Councils, and it took the Congress 35 years (1910 to 1945) to win complete victory. The Federation was successful in forcing the Congress to expel, in 1939, a whole group of unions belonging to the Congress of Industrial Organizations (CIO) but only after a struggle. A similar attempt in 1946 against the Machinists met a firm and spirited refusal. After this, the Congress decided to assert itself by setting up a series of departments and a full-scale organizing staff and otherwise make plain the status it felt it should enjoy as a fully autonomous Canadian trade union centre.

None of these disputes, however, really disturbed the basic harmony between the TLC and the AFL. The Congress, made up overwhelmingly of international unions

whose American members were affiliated to the Federation, never faltered in its allegiance to international unionism. It knew that in most industries international unions alone had the staff, experience and money to do the job that had to be done.

Meanwhile, however, the whole Canadian labour movement had been "by schisms rent asunder, by heresies distressed". Nationalism, industrial as against craft unionism, revolutionary ideas, and a mixture of nationalism and denominationalism all played their part. The unions expelled by the TLC in 1902 promptly formed the National Trades and Labour Congress of Canada, which, in 1908, became the Canadian Federation of Labour and in 1910 took in the Provincial Workmen's Association of Nova Scotia (which had never affiliated with the TLC). In 1919, just after the Winnipeg general strike and partly as a result of its failure, many western unionists, attracted by revolutionary industrial unionism, broke away from the Congress and the established international unions and formed the One Big Union, which for a time threatened to take away a large proportion of the TLC's membership on the Prairies and in British Columbia but within a few years had ceased to be of any importance. Between 1901 and 1921, small Roman Catholic unions (some of them perhaps former Knights of Labor Assemblies) sprang up in Quebec under the fostering care of the hierarchy and clergy and in 1921 formed the Canadian and Catholic Confederation of Labour (CCCL). In 1927, the Canadian Federation of Labour and other national unions (notably the Canadian Brotherhood of Railway Employees, which had been founded in 1908, had entered the TLC in 1917 and had been expelled from it in 1921) formed the All-Canadian Congress of Labour (ACCL), dedicated to industrial and national unionism. By 1935, purely Canadian unions of one kind or another, including the Communist Workers' Unity League, made up nearly half the total union membership in Canada. Within a few years, however, international unionism reasserted its predominance and for many years now about 70 p.c. of all Canadian unionists have belonged to international unions.

The great debate in the United States in the 1930s over the relative merits of industrial and craft unionism found only faint echoes in Canada. The TLC had both kinds and was most reluctant to expel the Canadian branches of CIO unions but, faced with a virtual ultimatum from the AFL that it must either expel the CIO unions or lose the AFL unions (whose Canadian membership was then far larger), it had really no choice and in 1939 the CIO unions were accordingly cast forth. They at once formed a Canadian CIO Committee, which became the fourth Canadian central organization.

Through all these changes and chances, the four railway running trades (Conductors, Engineers, Firemen and Trainmen) remained unaffiliated with any central body, although locals of every one of them had occasionally sent delegates to Trades and Labor Councils and to TLC conventions, and in 1896 their joint Legislative Board had sent two delegates to the TLC, of whom one was elected to the Congress Executive. The "big four", however, co-operated with each other and two Congress railway unions in a Dominion Joint Legislative Committee.

Late in 1939 came the first step toward unity, although, paradoxically, it created the first effective opposition to the TLC. The ACCL and the Canadian CIO Committee agreed to unite in the Canadian Congress of Labour (CCL), which was set up in 1940, with complete autonomy not only for itself but for the Canadian branches of CIO unions. Contrary to most expectations, this new Congress not only survived but grew and became strong, organizing mass production industries and pioneering in labour research, workers' education and labour public relations. For the next 15 years both Congresses passed resolutions almost every year in favour of unity and, from 1948 on, joint action on various matters became increasingly common. But as long as the two American central bodies were at loggerheads their Canadian counterparts could make little progress towards reunion because of the provisions of the TLC Constitution which, in effect, forbade it to affiliate any union 'dual' to an AFL union. Once the Americans agreed to discuss unity, this blockage disappeared. By the end of 1953 the two Canadian Congresses had appointed a joint Unity Committee, which first (1954) drew up a "No-raiding Agreement"



(under which unions of the rival organizations agreed not to try to steal each others' members) and in 1955 a "Merger Agreement". After ratification by the two Congress conventions, the Merger Agreement came into force and the founding convention of the united Canadian Labour Congress (CLC) took place in April 1956. In January 1957, the small and respectable remnant of the One Big Union joined the new Congress, the Locomotive Firemen followed in February, and the Trainmen in September.

During the Second World War, the CCCL, at first distrusted and denounced by the orthodox unions as a collection of thinly veiled "company unions", shed the narrow denominationalism and French-Canadian nationalism of its early years and by the 1950s had become one of the most militant labour organizations in the country. After numerous battles with the international unions, it also came to co-operate with them for common ends and for a time, in 1956 and 1957, it looked as if the Confederation would come into the CLC. But the negotiations broke down and it stayed out. In 1960, it formally "de-confessionalized" itself and became the Confederation of National Trade Unions (CNTU).

In 1911, there were only 133,000 union members in Canada, and at the outbreak of the First World War still only 166,000. By 1919 the number had more than doubled to 378,000; by 1924 it had sunk to 261,000; and by 1932 it had recovered to 322,000. The depression cut it back to 281,000 but by 1938 it was slightly higher than in 1919. During the Second World War, the immense new industrial development and the organization of the mass production industries again more than doubled the pre-war figure, and in 1949 membership passed the 1,000,000-mark. Since then, growth has been slower; the manual workers in the large industries and the main crafts in the cities and big towns have been pretty effectively organized but the white-collar workers and the small town workers in general have not. From 1958 to 1964, total union membership was almost stationary but in 1965 it started to rise again substantially. CLC unions now (1966) have about three quarters of the 1,600,000 organized workers in Canada; the CNTU has about 10 p.c. (almost all in Quebec) and another 8 p.c. are in international unions unaffiliated with the CLC.

In some respects, Canadian trade unionism has changed out of all recognition since the first Canadian Labor Congress met, over 80 years ago; in others, it has changed very little. The basic aims and basic organization are the same; the change has been chiefly in the legislation the unions want passed. This is partly because so much of what they originally wanted they have long since got—one day's rest in seven, cash payment of wages, bureaus of labour statistics, a Department of Labour, the nine-hour day, workmen's compensation, universal suffrage, free compulsory education; it is partly also because some of the things they once wanted no longer interest them, or even, as with compulsory arbitration (repeatedly demanded down to 1902), have become anathema; but it is also because, on many matters, circumstances, or the general climate of opinion, or both, have changed. This is true of temperance legislation, the single tax, the initiative and referendum, the abolition of Lieutenant-Governorships and the High Commissionership to Britain, the election of the Governor General, demonetization of gold and silver, condemnation of manual training in the schools, transfer of university and college grants to the schools, exclusion of Oriental immigrants and of "pauper" immigrants from Europe. But abolition of the Senate, public ownership of banks and public utilities, minimum wages and shorter hours are all part of the CLC program, as they were of the TLC. So is support for the co-operative movement.

One subject that figured prominently in TLC resolutions from 1886 to 1910 was co-operation with the farmers, who in those days were of course far more powerful, economically and politically, than organized labour. In 1886, the Congress appointed a committee to meet with the Dominion Grange to get some united action on the Factory Act. In 1893, it met with the Grange and the Patrons of Industry (a new farm organization) and adopted a common "platform", set up a standing committee with the Patrons to devise "a scheme for a union of the labor forces (rural and urban)", and provided for a vote by affiliated organizations on allowing the Grange and the Patrons to affiliate. In 1894, the Congress constitution was amended to let the Patrons in; this was deleted in 1895 but in



1896 the convention again resolved that unity with the Patrons was desirable and instructed its Executive to be represented at any meeting the Patrons called. The Dominion election of 1896 pretty well did for the Patrons but the idea of co-operation with farm organizations persisted and in 1910 the Executive recommended appointment of a special committee for this purpose.

From then until 1941, labour seems to have been too preoccupied with more urgent matters to give this one much attention. In that year, the TLC declared that "the well-being of labor is inseparably bound up with the prosperity of the farmer"; expressed its fear that "many farmers" would be "driven off the land" and "forced into competition with workers thereby driving down wages"; and announced its "sympathy and support for the farmers to secure adequate debt protection and parity of farm prices". The CCL declared in favour of co-operation with farm organizations and of government aid in marketing farm produce in any friendly country. The next year the TLC called on the Government to help the farmers meet the shortages of machinery and services. In 1946 both Congresses supported the Alberta farmers' strike; the older declared for "close co-operation" with national and provincial farm organizations; the younger suggested a conference of "Labour organizations and the official spokesman of the farmers" to work toward "complete unity . . . in our demands for social security". In 1947 the CCL declared its support for the farmers "in their attempt to get a fair price for their products", and in 1948 pledged itself to do all it could to promote "farmer-Labour-teacher" co-operation for "common aims and objectives". In 1949 the TLC listened to a speech of greeting from the President of the Alberta Farmers' Union (already affiliated with the Calgary Trades and Labor Council). In 1951 the CCL called on the Government to work out with farm organizations "a just farm price-structure". The next year the older Congress had another speech of greetings, this time from the President of the Interprovincial Farm Union Council, and the other Congress declared for a "National Co-ordinating Committee of Farm and Labour organizations". From 1953 to 1955 both Congresses had farm speakers each year; so did the new CLC at its founding convention in 1956. In February 1954 the two Congresses and the Interprovincial Farm Union Council set up the Farmer-Labour Economic Council, which still exists.

Another subject of great importance which has had a place in almost every meeting of the national central organizations is political action. The Canadian Labor Union dealt with it in 1876 and 1877. The Congress of 1883 unanimously resolved that "the working class of this Dominion will never be properly represented in Parliament or receive justice in the legislation of the country until they are represented by men of their own class and opinions". The 1886 convention reaffirmed this and the members pledged themselves to "use their utmost endeavours, wherever practicable, to bring out candidates for the local and Dominion elections" or, where this was not "deemed advisable", to support the candidate "who pledges himself to vote for most planks of the platform of this Congress". The 1887 convention dropped this last part and adopted the remainder unanimously. The 1889 convention set up a committee to consider forming an "independent political party" and recommended the organizations to nominate candidates where practicable and elsewhere to support the party which was prepared to do most for Labour. In 1892, on motion of two French-Canadian delegates, the convention resolved to "take into consideration the advisability of forming a labor party". Perhaps as part of the consideration, the 1893 convention invited its member organizations to answer four questions: (1) Are you in favor of the present industrial system? (2) Are you in favor of the so-called co-operative system of productive (sic) distribution and exchange? (3) Are you in favor of the communistic system of government? (4) Have you any other system better than the above to suggest? (Strange to say, there were almost no replies.) In 1895, by a very narrow majority, the convention voted to admit "sections of the Socialist Labor Party" (this was repealed in 1896) and resolved that "labor organizations should now unite for independent political action".

But some organizations had already been taking political action. In 1874, Ottawa elected the first Labour M.L.A. in Canadian history. In 1883, the Toronto Trades and

Labor Council nominated two provincial candidates and came close to electing one, and the Hamilton Knights of Labor nominated a candidate who made a respectable showing. In 1886, there were provincial Labour candidates in Toronto, Hamilton, London and Montreal. In 1887, Toronto had a Labour candidate for the Dominion House of Commons and, in 1888, the Montreal Central Labor Council and the Knights of Labor actually elected their candidate in a Dominion by-election in Montreal East. Ottawa had a Labour candidate in the Dominion General Election of 1891.

For the most part, however, until 1906 the unions seem to have relied on meetings of the TLC or its provincial committees with Dominion and provincial Ministers, at which Labour presented its legislative proposals; and from the early 1890s, these meetings have been standard practice. However, by 1899, the Ontario Executive had decided that this was useless and that "the only way to get from the Government what is our right is to elect men in sympathy with the labor cause". In the same year, the Winnipeg Trades and Labor Council and the Winnipeg Labor Party nominated A. W. Puttee for the House of Commons; and the Congress, presided over by Ralph Smith, M.L.A. for Nanaimo, B.C., decided to ask its member organizations whether they favoured an independent Labour party and would back its candidates. The vote was 1,424 in favour to 167 against, with only three organizations out of 44 voting "no". The 1900 convention decided this was enough to justify the Congress in "taking such steps as it deemed advisable to further the progress of such action". It also asked the Nanaimo miners to nominate President Smith for the House of Commons. They did and both Smith and Puttee were elected, with another Labour candidate in Manitoba barely defeated. In 1903 a new Congress President, John Flett, was declaring that the meetings with the Dominion Government were useless and that Canadian Labour should follow the British example and elect Labour men to Parliament. In 1904 he reiterated this and for three years the annual interview was dropped and a parliamentary counsel was substituted to look after Congress interests full-time during the session. In 1903, 1904 and 1905 the conventions passed resolutions favouring independent Labour candidates wherever possible. In 1906, Alphonse Verville, President of the Congress, was elected to the House of Commons for Maisonneuve (Montreal) and declared he hoped for "at least a dozen" Labour members in the next Parliament. The convention responded by adopting what became the political action policy of the TLC for the remainder of its life. The Congress was to endorse sending Labour representatives to Parliament and the Legislatures; its provincial Executives were to summon provincial conventions of trade unionists and sympathizers to set up "the necessary associations"; and the Congress was then to step out of the picture, having "recommended" its own Platform of Principles as the platform for "this independent effort". The result of this was the foundation of a Canadian Labour Party in Ontario, Quebec, Manitoba, British Columbia and Nova Scotia. Though launched with considerable fanfare, its only substantial success was in Ontario in 1919, when eleven Labour candidates were elected and two Labour Ministers entered the Farmer-Labour coalition. A few surviving sections entered the Co-operative Commonwealth Federation (CCF) in 1932 and 1933, along with the Independent Labour Party of Manitoba, which had elected two members to the House of Commons.

The CCL explicitly endorsed the CCF in 1943 and continued to do so throughout the remainder of its existence. It set up political action committees to implement this policy. Its efforts certainly helped the CCF to win power in Saskatchewan in 1944 and to retain it for 20 years; to maintain its position as the official Opposition in British Columbia for most of the past thirty years; to become briefly, although for the second time, the official Opposition in Ontario from 1948 to 1951; to win a few seats in the Nova Scotia Legislature; and to carry some industrial ridings in the House of Commons in the elections of 1945, 1949, 1953 and 1957. But on the whole the results were not what the Congress had hoped.

The CLC at its first convention adopted a compromise policy on political action, leaving its provincial Federations, its local Councils and, of course, its autonomous affiliated unions free to follow whatever line they saw fit and authorizing its Political Education Committee, under the guidance of the Executive Council, to initiate discussions



with other free trade unions, the principal farm organizations, the co-operative movement, the CCF and "other parties pledged to support the legislative programme" of the Congress, in order "to explore and develop co-ordination of action in the legislative and political field". Nothing much came of this until after the Dominion General Election of 1958, when the Congress invited the same groups to enter discussions looking to the formation of a new political party. The farm organizations and the co-operatives (mainly farmer) declined; the CCF accepted. In 1961, the CLC and the CCF, with a variety of sympathizers organized in "New Party Clubs", founded the New Democratic Party.

The Congress did not itself affiliate with the new party (although a number of its unions, with some 200,000 members, did). It remains an independent national trade union centre. The relationship is much the same as that between the British Trades Union Congress and the British Labour Party. Indeed, it is hardly too much to say that the founding of the New Democratic Party represents the triumph of the British tradition of direct political action, brought to Canada by British working-class immigrants in their baggage, over the non-partisan AFL tradition. It is one of the marks of the independence of the Canadian labour movement from the American, with which it is otherwise, in so many ways, so closely associated.

The CLC is wholly independent of the AFL-CIO, which since 1956 has had no branches, no staff and no jurisdiction in Canada (although this does not apply fully to some of its Trade Departments). The Canadian sections of most international unions affiliated with the CLC enjoy complete autonomy. The CNTU and its unions are, of course, purely Canadian and almost entirely French-Canadian, and in the past few years have been engaged in a vigorous competition with the CLC and its affiliates in Quebec. Internationally, the CLC is a member of the International Confederation of Free Trade Unions (ICFTU) and the CNTU of the International Federation of Christian Trade Unions (IFCTU).

In the centennial year 1967, Canadian unions can look back on a record of impressive achievement. A century ago, they were at best barely legal, were few, small, weak and scattered, without even local let alone national central organization, hemmed in by all manner of restrictions, distrusted, despised or hated by most of those in authority, employers and governments alike. Their members worked long hours for meagre wages and under poor conditions. Even Factory Acts had yet to be passed and social security was undreamed of. Now, unions are fully legal, with collective bargaining (long fiercely resisted) legally compulsory. They are many, big and strong; they cover every province, almost every city and town; they have local, provincial and national federations which enable them to speak with one voice to governments. They are important social institutions, accepted even by those who like them least. They take an active and leading part in all manner of activities, whether governmental or private. They are consulted, listened to, represented on boards and commissions and committees of almost every kind. Their members generally work 40 hours a week or less, for wages that are among the highest in the world, and under reasonably good conditions. And it is largely union effort that has won, not only for union members but for hundreds of thousands of people never even eligible for membership, a substantial measure of social security in unemployment, illness, disability or other adversity. The fathers of Canadian unionism, most of them unknown and unsung, perhaps deserve as well of this generation as the Fathers of Confederation itself.

### Union Membership

Union membership in Canada at the beginning of 1966 totalled 1,736,000, the highest on record. It amounted to 30.7 p.c. of the 5,658,000 non-agricultural paid workers in Canada as of January 1966, and 24.5 p.c. of the over-all labour force.



## 33.—Union Membership in Canada, 1938-66

Year	Members	Year	Members	Year	Members	Year	Members
	'000		'000		'000		'000
1938.....	382	1945.....	711	1953.....	1,220	1960.....	1,459
1939.....	359	1946.....	832	1954.....	1,268	1961.....	1,447
1940.....	362	1947.....	912	1955.....	1,268	1962.....	1,423
1941.....	462	1948.....	978	1956.....	1,352	1963.....	1,449
1942.....	578	1949 <sup>1</sup> .....	1,006	1957.....	1,386	1964.....	1,493 <sup>4</sup>
1943.....	665	1951 <sup>2</sup> .....	1,029	1958.....	1,454	1965.....	1,589
1944.....	724	1952.....	1,146	1959.....	1,459 <sup>3</sup>	1966.....	1,736

<sup>1</sup> Figures for years up to and including 1949 are as at Dec. 31; figures from 1951 are as at Jan. 1. <sup>2</sup> Newfoundland included from 1949. <sup>3</sup> Adjustment in coverage resulted in a net addition of approximately 23,000 members. <sup>4</sup> Includes an addition of approximately 7,000 members resulting from improved coverage.

Almost three quarters of all union members in Canada were in organizations affiliated with the Canadian Labour Congress (CLC); in most cases these unions were also affiliated with the American Federation of Labor and Congress of Industrial Organizations (AFL-CIO). Another 11 p.c. of the total union membership in 1966 was affiliated with the Confederation of National Trade Unions (CNTU). Unaffiliated international and national unions accounted for 12 p.c. and 3 p.c. was in independent local organizations.

The 1966 union membership in Canada showed a net gain of 9.2 p.c. over 1965, the highest percentage increase in any year since 1952. Among international unions operating in Canada, the largest increase was reported by the United Automobile, Aerospace and Agricultural Implement Workers of America, with a gain of 19,300 members. The United Steelworkers of America reported an increase of 10,000 and the International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America an increase of 9,800. The highest relative increases were reported by the International Brotherhood of Boilermakers, Iron Shipbuilders, Blacksmiths, Forgers and Helpers with a gain of 2,400 members or 54 p.c. over 1965, the Retail Clerks International Association with an increase of 4,100 members or 34 p.c. and the Canadian Federation of Public Service Employees (Fédération canadienne des employés du service public) with an increase of 33 p.c. over the 20,000 members reported in 1965. Total membership of unions affiliated with the CLC was higher by 101,000 than a year earlier; affiliates of the Confederation of National Trade Unions showed an increase of 38,000, much of the latter being attributable to the affiliation during the year of the Quebec Government Employees Union (Syndicat des fonctionnaires provinciaux du Québec) with the CNTU.

The ten largest unions active in Canada in 1966, listed below in order of size of membership, together accounted for 37 p.c. of total union membership in Canada. All ten registered membership increases over 1965.

Relative Position in 1966	Union and Affiliation	Membership in 1966	Relative Position in 1965
1	United Steelworkers of America (AFL-CIO/CLC)	120,000	1
2	International Union, United Automobile, Aerospace and Agricultural Implement Workers of America (AFL-CIO/CLC)	96,800	3
3	Canadian Union of Public Employees (CLC)	89,400	2
4	United Brotherhood of Carpenters and Joiners of America (AFL-CIO/CLC)	71,700	4
5	International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America (Ind.)	52,200	6
6	International Woodworkers of America (AFL-CIO/CLC)	47,500	5
7	International Association of Machinists and Aerospace Workers (AFL-CIO/CLC)	43,000	7
8	International Brotherhood of Electrical Workers (AFL-CIO/CLC)	42,000	8
9	International Brotherhood of Pulp, Sulphite and Paper Mill Workers (AFL-CIO/CLC)	39,900	9
10	Canadian Brotherhood of Railway, Transport and General Workers (CLC)	33,500	10

International unions, with 1,220,000 members in Canada, continued to comprise just over 70 p.c. of the total union membership in 1966. Another 26 p.c. of Canada's trade union membership was in national and regional unions; directly chartered local unions comprised 1.5 p.c. and independent local organizations something less than 3 p.c.

There were 217 directly chartered unions reported at the beginning of 1966. Of these, 160 locals with 18,000 members were directly chartered by the CLC; another 57, with a combined membership of 6,800, were affiliated with the CNTU but not connected with any of the federations of that organization. There were 127 independent local organizations active at the beginning of 1966, with a total membership of 46,004, representing 2 p.c. of the total Canadian membership.

#### 34.—Union Membership, by Type of Union and Affiliation, as at January 1966

Type and Affiliation	Unions	Locals	Membership
	No.	No.	No.
<b>International Unions</b> .....	<b>111</b>	<b>4,765</b>	<b>1,219,482</b>
AFL-CIO/CLC.....	90	4,303	1,070,008
CLC only.....	3	49	14,253
AFL-CIO only.....	8	14	16,389
Unaffiliated railway brotherhoods.....	2	113	8,674
Other unaffiliated unions.....	8	286	110,158
<b>National Unions</b> .....	<b>55</b>	<b>2,507</b>	<b>445,163</b>
CLC.....	19	1,393	179,364
CNTU.....	14	730	181,624
Unaffiliated unions.....	22	384	84,175
<b>Directly Chartered Local Unions</b> .....	<b>217</b>	<b>217</b>	<b>25,191</b>
CLC.....	160	160	18,414
CNTU.....	57	57	6,777
<b>Independent Local Organizations</b> .....	<b>127</b>	<b>127</b>	<b>46,004</b>
<b>Grand Totals</b> .....	<b>510</b>	<b>7,616</b>	<b>1,735,840</b>

A complete list of the individual international and national unions, with number of locals and membership in Canada, is carried in the annual Department of Labour publication *Labour Organizations in Canada*, available from the Queen's Printer, Ottawa, price 50 cents.

### Section 8.—Strikes and Lockouts

Statistical information on strikes and lockouts in Canada is compiled by the Economics and Research Branch of the Department of Labour on the basis of reports from the National Employment Service. Table 35 covers strikes and lockouts lasting ten man-days or more. The developments leading to work stoppages are often too complex to make it practicable to distinguish statistically between strikes on the one hand and lockouts on the other. However, a work stoppage that is clearly a lockout is not often encountered.

The number of workers involved includes all workers reported on strike or locked out, whether or not they all belonged to the unions directly involved in the disputes leading to work stoppages. Workers indirectly affected, such as those laid off as a result of a work stoppage, are not included. Duration of strikes and lockouts in terms of man-days is calculated by multiplying the number of workers involved in each work stoppage by the number of working days the stoppage was in progress. The duration in man-days of all work stoppages in a year is also shown as a percentage of estimated working time, based on the annual average of all non-agricultural paid workers in Canada. The data on duration of work stoppages in man-days are provided to facilitate comparison of work stoppages in terms of a common denominator. They are not intended as a measure of the loss of productive time to the economy.

## 35.—Strikes and Lockouts, by Industry, 1965 with Totals for 1961-65

NOTE.—Comparable statistics, except for 1961, are given in the corresponding table of previous Year Books; the latter are available in the Department of Labour annual publication *Strikes and Lockouts in Canada*.

Industry	Strikes and Lockouts Beginning during Year	Strikes and Lockouts in Existence during Year		
		Strikes and Lockouts	Workers Involved	Duration in Man-Days
	No.	No.	No.	No.
<b>Agriculture</b> .....	—	—	—	—
<b>Forestry</b> .....	3	3	1,199	54,460
<b>Mines</b> .....	25	25	8,402	58,460
Metal.....	11	11	3,992	29,350
Mineral fuels.....	10	10	4,122	23,300
Non-metal.....	1	1	104	4,330
Quarries.....	2	2	69	1,250
Incidental services.....	1	1	115	230
<b>Manufacturing</b> .....	227	244	97,017	1,470,770
Foods and beverages.....	25	26	5,011	119,580
Rubber.....	8	9	5,343	35,960
Leather.....	3	3	208	7,990
Textiles.....	5	5	1,868	30,390
Clothing.....	10	10	2,541	4,470
Wood.....	9	10	1,494	12,350
Furniture and fixtures.....	6	6	279	1,630
Paper.....	12	14	4,874	48,700
Printing and publishing.....	5	11	1,183	193,210
Primary metals.....	18	19	8,772	194,400
Metal fabricating.....	28	28	4,253	27,800
Machinery.....	12	13	9,100	60,830
Transportation equipment.....	26	26	38,857	542,890
Electrical products.....	19	22	7,388	68,210
Non-metallic mineral products.....	15	15	2,470	33,520
Petroleum and coal products.....	7	7	1,357	72,560
Chemical products.....	7	7	1,326	12,250
Miscellaneous manufacturing.....	12	13	693	4,030
<b>Construction</b> .....	127	127	19,357	237,240
<b>Transportation and Utilities</b> .....	54	55	32,532	331,210
Transportation.....	35	36	13,779	152,580
Storage.....	5	5	1,607	59,470
Communication.....	2	2	12,278	90,120
Power, gas and water.....	12	12	4,868	29,040
<b>Trade</b> .....	21	25	11,183	154,600
<b>Finance</b> .....	—	—	—	—
<b>Service</b> .....	19	20	2,101	42,070
Education.....	4	4	1,080	18,560
Health and welfare.....	1	1	9	170
Services to business.....	—	—	—	—
Personal services.....	13	14	992	23,160
Miscellaneous services.....	1	1	20	180
<b>Public Administration (local)</b> .....	2	2	79	1,060
<b>Totals</b> .....	1965	478	501	171,870
1964	327	343	100,535	1,580,550
1963	313	332	83,423	917,140
1962	290	311	74,332	1,417,900
1961	272	287	97,959	1,335,080



# CHAPTER XIX.—TRANSPORTATION

## CONSPECTUS

	PAGE		PAGE
<b>Part I.—Government Promotion and Regulation of Transportation.....</b>	785	Subsection 2. Harbours.....	822
<b>Part II.—Rail Transport.....</b>	788	Subsection 3. Canals.....	824
SECTION 1. RAILWAYS.....	788	Subsection 4. The St. Lawrence Seaway.....	828
Subsection 1. Railway Operating Statistics.....	790	Subsection 5. Marine Services of the Federal Government.....	832
Subsection 2. The Canadian National Railway System.....	797	SECTION 2. FINANCIAL STATISTICS OF WATERWAYS.....	834
SECTION 2. EXPRESS COMPANIES.....	799	<b>Part V.—Civil Air Transport.....</b>	838
<b>Part III.—Road Transport.....</b>	800	SPECIAL ARTICLE: An Outline of the Development of Civil Air Transport in Canada.....	838
SECTION 1. PROVINCIAL MOTOR VEHICLE AND TRAFFIC REGULATIONS.....	800	SECTION 1. CIVIL AVIATION ADMINISTRATION AND POLICY.....	843
SECTION 2. HIGHWAYS, ROADS AND STREETS.....	804	SECTION 2. CURRENT AIR SERVICES.....	845
SECTION 3. MOTOR VEHICLES.....	808	SECTION 3. CIVIL AVIATION OPERATION STATISTICS.....	852
<b>Part IV.—Water Transport.....</b>	816	<b>Part VI.—Oil and Gas Pipelines.....</b>	855
SECTION 1. SHIPPING FACILITIES AND TRAFFIC.....	816		
Subsection 1. Shipping.....	816		

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

The physiographic and population characteristics of Canada present unusual difficulties from the standpoint of transportation. The country extends 4,000 miles from east to west and its main topographic barriers run in a north-south direction, so that sections of the country are cut off from one another by such water barriers as Cabot Strait and the Strait of Belle Isle separating the Island of Newfoundland from the mainland; by rough, rocky forest terrain such as the New Brunswick-Quebec border region and the areas north of Lakes Huron and Superior dividing the industrial region of Ontario and Quebec from the agricultural areas of the Prairie Provinces; and by the mountain barriers between the prairies and the Pacific Coast. To such a country, with a population so dispersed and producing for export as well as for consumption in distant parts of the country itself, efficient and economical transportation facilities are necessities of existence.

## PART I.—GOVERNMENT PROMOTION AND REGULATION OF TRANSPORTATION

The Federal Government plays a twofold role in the development of transportation services. One is a promotional role, ensuring the growth and development of the kind of transportation appropriate to the times. The other is a regulatory role, including economic regulation of rates and services and also technical regulation to meet safety requirements and for other purposes. Examples of promotion are the building of canals from the time of Confederation to the present-day Seaway, the underwriting of railway development and branch-line extension, the establishment of Air Canada, the large investments made in airports and aeronautical installations, and the building of the Trans-Canada Highway. Examples of economic regulation include control over transportation tariffs and services that have been carried out by various federal agencies including the Board of Transport Commissioners, the Air Transport Board and the Canadian Maritime Commission.

The federal Department of Transport and the various Crown agencies reporting to Parliament through the Minister of Transport have jurisdiction over canals, harbours, shipping, civil aviation and interprovincial and international railways. Interprovincial or international pipelines for carrying gas, crude oil or petroleum products are under the jurisdiction of the National Energy Board. Jurisdiction over for-hire interprovincial or

international highway transport also rests with the Federal Government but these powers are exercised by the provincial highway transport Boards under the federal Motor Vehicle Transport Act of 1954.

Railway regulation was developed in a period when railways enjoyed a virtual monopoly of transport in the country. Measures to protect the public against excessive charges, unjust discrimination and other objectionable monopoly practices, together with measures to ensure safe operations, have over the years subjected railways to the most comprehensive regulation of any Canadian industry. In the intervening years the rapid growth of road, air and pipeline services has ended the railway monopoly for a large part of the total traffic available and has plunged the railways into a highly competitive situation.

A Royal Commission was appointed in 1959, under the chairmanship first of Hon. C. P. McTague and later of M. A. MacPherson, to inquire into the railway rate structure and other problems. Its findings were published in three volumes which appeared between March 1961 and July 1962. The report indicated a need to shift from regulating monopoly to maintaining a balance between the several competing modes of transport.

Legislation based on the findings of the MacPherson Royal Commission is before Parliament at this writing (January 1967) in the form of Bill C-231. The Bill defines a national transportation policy for Canada looking to the achievement of an economic and efficient transportation system making the best use of all available modes of transportation at the lowest total cost. It would create a new body, the Canadian Transport Commission, to carry out the functions now performed by the Board of Transport Commissioners for Canada, the Air Transport Board and the Canadian Maritime Commission. In addition, it would be responsible for regulating the pipeline carriage of commodities other than oil and gas, a comparatively new and promising transportation development. The Bill also defines a framework within which the interprovincial and international motor transport industry could be regulated by the proposed Canadian Transport Commission.

The general intent of Bill C-231 is to create a situation in which the development of the transportation industry and the protection of the public against excessive or discriminatory charges are accomplished in the main by competition between modes rather than by regulation and control. The railways would be relieved of some of the more onerous and outdated restrictions on their freedom to meet competition. On the other hand, a shipper who has no practical alternative to rail shipment could apply to have a maximum rate fixed for his goods by the new Commission. The Bill also provides a procedure to allow the railways, under safeguards for the public interest, to abandon lines and withdraw passenger services where they are no longer needed.

**The Board of Transport Commissioners for Canada.**—The Board of Transport Commissioners for Canada was created and initially named the Board of Railway Commissioners for Canada by the Railway Act, 1903, and was given its present name by the Transport Act, 1938. It was organized on Feb. 1, 1904 and succeeded to all the powers and duties of its predecessor, the Railway Committee of the Privy Council. The Board, now consisting of a Chief Commissioner, an Assistant Chief Commissioner, a Deputy Chief Commissioner and three Commissioners, has extensive regulative and administrative powers and is also a statutory court of record, so constituted by the Railway Act and recognized as such by other courts. The finding or determination of the Board upon any question of fact within its jurisdiction is binding and conclusive and no order or decision may be questioned or reviewed except on appeal to the Supreme Court of Canada upon a question of law or a question of jurisdiction with leave of a judge of that Court, or by the Governor in Council.\*

The Board has jurisdiction under more than a score of Acts of Parliament, including jurisdiction under the Railway Act and the Transport Act, over transportation by railway and by inland water, and over communication by telephone and telegraph.

\* The Board's judgments are reported in *Canadian Railway Cases* and *Canadian Railway and Transport Cases*, and its judgments, orders, rulings and regulations are published by the Queen's Printer, Ottawa, in what is known as *J.O.R. & R.*



Under the Railway Act its jurisdiction is, stated generally, in respect of construction, maintenance and operation of railways that are subject to the legislative authority of the Parliament of Canada, including matters of engineering, location of lines, crossings and crossing protection, safety of train operation, operating rules, investigation of accidents, accommodation for traffic and facilities for service, abandonment of operation, freight and passenger rates, and uniformity of railway accounting. The Board also has certain jurisdiction over telephones and telegraphs, including regulation of the telephone tolls of The Bell Telephone Company of Canada, the British Columbia Telephone Company, the Bonaventure and Gaspé Telephone Company and the Yellowknife Telephone Company, and over tolls for express traffic and for the use of international bridges and tunnels.

Regulation of railway freight and passenger rates is one of the Board's principal tasks. Except for certain statutory rates, it has power "to fix, determine and enforce just and reasonable rates, and to change and alter rates as changing conditions or cost of transportation may from time to time require"; it may disallow any tariff that it considers to be unjust or unreasonable or contrary to any provision of the Railway Act; it may prescribe other tolls in lieu of the tolls disallowed, or require the railway company to substitute a tariff satisfactory to the Board. During the past decade, there has been a succession of applications for authority to make general freight rate and general telephone rate increases.

Under the Transport Act, the Board entertains applications for licences for ships to transport goods or passengers for hire or reward between places in Canada on the Great Lakes and the Mackenzie and Yukon Rivers, except goods in bulk on waters other than the Mackenzie River. Before granting a licence, the Board must be satisfied that public convenience and necessity require such transport. The Board also has regulative powers over tolls for such transport.

**The Air Transport Board.**—The Air Transport Board was established in September 1944 by amendment to the Aeronautics Act. Subsequent amendments to the Act were made in 1945, 1950, 1952 and 1966. By the most recent amendment the Board's complement was increased to five members including the Chairman and the staff is comprised of: an Executive Director; a Legal Branch; an Operations Branch which includes a Traffic Division, an Operations Analyst, an International Relations Division, and a Licensing and Inspection Division; an Economics and Accounting Branch; and a Secretary's Branch.

The Board is responsible for the economic regulation of commercial air services in Canada and is also required to advise the Minister of Transport in the exercise of his duties and powers in all matters relating to civil aviation. The regulatory function relates to Canadian air services within Canada and abroad and to foreign air services operating into and out of Canada. It involves the licensing of all such services and the subsequent regulation of the licensees in respect of their economic operation and the provision of service to the public. As provided by the Act, the Board issues Regulations, approved by the Governor in Council, dealing with the classification of air carriers and commercial air services, applications for licences to operate commercial air services, accounts, records and reports, ownership, transfers, consolidations, mergers and leases of commercial air services, traffic tolls and tariffs, and other related matters. Detailed regulatory instructions are issued by the Board in the form of General Orders and Rules relating to all air services or groups of air services, Board Orders relating to individual air services, and Circulars for general guidance and information.

On Oct. 20, 1966, the Minister of Transport tabled in the House of Commons a "Statement of Principles for Regional Air Carriers", which assigned to the Board the responsibility for initiating measures to implement the policy set out therein. In this connection, the Board is introducing regulations respecting domestic and international charter and inclusive-tour operations, subsidies to regional air carriers, and increased financial control, and is reviewing the route structures of regional air carriers.

The Board takes an active part in the work of the International Civil Aviation Organization and, when appropriate, undertakes bilateral negotiations for the exchange of traffic rights. At present, Air Canada and Canadian Pacific Airlines Limited are Canada's designated international scheduled carriers.



**The Canadian Maritime Commission.**—The Canadian Maritime Commission was established by Act of Parliament in 1947 (RSC 1952, c. 38) as a separate department of the Government reporting to Parliament through the Minister of Transport. It is the function of the Commission to "consider and recommend to the Minister from time to time such policies and measures as it considers necessary for the operation, maintenance, manning and development of a merchant marine and a ship-building and ship-repairing industry commensurate with Canadian maritime needs". The Commission is authorized to examine into, ascertain and keep records of all phases of ship operation and to "administer, in accordance with regulations of the Governor in Council, any steamship subventions voted by Parliament". The Commission administers the Canadian Vessel Construction Assistance Act (RSC 1952, c. 43) which allows shipowners to benefit from accelerated depreciation and, under given circumstances, from tax relief.

Subsidies are paid by the Federal Government for the maintenance of essential steamship services; the services and the amounts paid for the years ended Mar. 31, 1965 and 1966 are given on p. 838.

**The National Energy Board.**—The National Energy Act (SC 1959, c. 46) proclaimed Nov. 1, 1959, provided for the establishment of a five-member Board charged with the duty of assuring the best use of energy resources in Canada. In the performance of this function, the Board is responsible for the regulation of the construction and operation of the oil and gas pipelines that are under the jurisdiction of the Parliament of Canada, the tolls charged for transmission by oil and gas pipeline, the export and import of gas and the export of electric power, and the construction of the lines over which such power is transmitted. The functions and operations of the Board are covered in the Domestic Trade and Prices Chapter of this volume, Part II, Section 4.

## PART II.—RAIL TRANSPORT\*

### Section 1.—Railways†

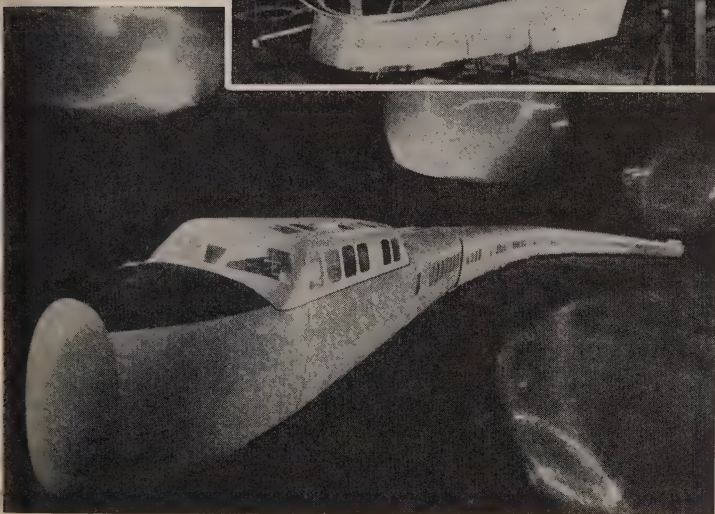
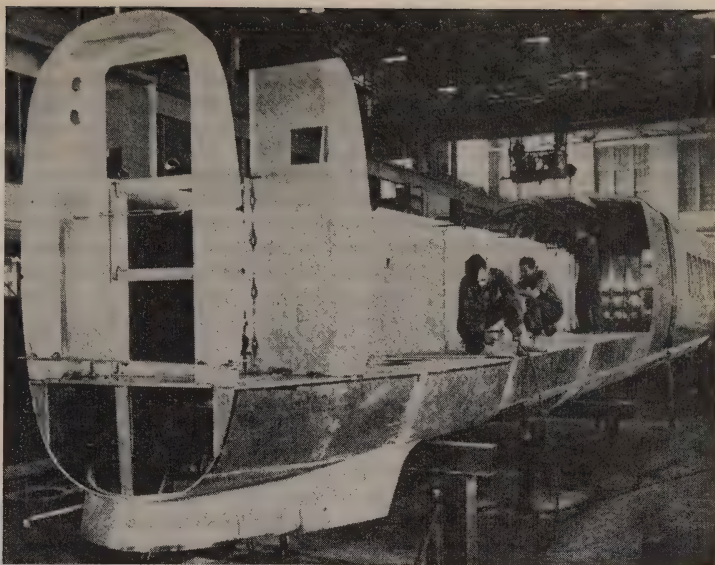
Since Confederation the railways of Canada have been the principal transport facility throughout, and beyond, the nation. The two great transcontinental systems, supplemented by a major north-south line on the West Coast and a number of regional independent railways, are the only carriers able to transport large volumes of freight at low cost in all weather by continuous passage over Canadian transcontinental routes.

The two nation-wide railway companies control a wide variety of Canadian and international transport and communications services. The government-owned Canadian National Railway System is the country's largest public utility and operates the greatest length of trackage in Canada. It is the only railway serving all ten provinces and has completed a branch line to serve the Great Slave Lake area of the Northwest Territories. In addition, it operates a highway service, a fleet of coastal steamships, an extensive express service, a chain of large hotels and resorts, and a scheduled air service connecting all major cities across the country and Canadian with other North American and European points. The Canadian National, jointly with the Canadian Pacific Railway Company, operates a national telecommunications system that employs modern microwave, high-speed teletype and private wire networks, telex, data and weather facsimile transmission and movement of telegrams to any point in the world. The Canadian Pacific Railway Company is a joint-stock corporation also operating a transcontinental railway, an express service, a domestic truck and bus network, a fleet of inland, coastal and ocean-going vessels, a chain of year-round and resort hotels, a domestic airline servicing points in British Columbia, Alberta and Yukon Territory, a transpacific airline service to the Orient and the Antipodes, air services to Mexico, Peru, Chile and Argentina, a transpolar air route connecting Vancouver and Amsterdam, a transatlantic service to Portugal, Spain and Italy, and a (one flight daily) transcontinental air service between Vancouver and Montreal.

\* The statistical data in this Part were revised in the Transportation Division, Dominion Bureau of Statistics; more detailed information is given in the annual reports of the Division.

† A special article on operational and technological changes in rail transport appears in the 1965 Year Book at pp. 755-761.

Canadian National's new turbine-driven passenger train will be in service between Montreal and Toronto in mid-1967. It will zip non-stop over the 135 miles between the two cities in about 3½ hours, almost halving the time required two years previously.



The new train is constructed almost completely of weight-saving aluminium, fabricated on aerodynamic lines and climaxes more than 100 years of progress in travelling speed and comfort.





The Pacific Great Eastern Railway, owned by the British Columbia Government, operates over an 800-mile route from North Vancouver to Fort St. John in the Peace River area of northeastern British Columbia, with several northern branch lines recently completed or under construction. Interline barge and rail connections at Vancouver provide a complete service to any railway point on the Continent. The completion in 1958 of the northern section of this line opened up to development the vast interior of the province, providing access to its rich natural resources and stimulating large-scale investment in new industrial plants throughout the area it serves. The PGE is fully dieselized and controlled by an intricate microwave system from its Vancouver offices.

**Government Aid to Railways.**—In order that the private railways of Canada might be constructed in advance of settlement as colonization roads or through sparsely settled districts where little traffic was available, it was necessary for federal and provincial governments and even for municipalities to extend some form of assistance. The form of aid was usually a bonus of a fixed amount for each mile of railway constructed and, in the early days, grants of land were also made other than for right-of-way. As the country developed, objections to the land-grant method became increasingly apparent and aid was given more frequently in the form of a cash subsidy for each mile of line, a loan or a subscription to the shares of the railway. Guarantees of debenture issues came later and, since the formation of the Canadian National Railways, all debenture issues of that System, except those for rolling-stock, have been guaranteed by the Federal Government. During the era of railway expansion before 1918, provincial governments guaranteed the bonds of some railway lines that afterwards were incorporated in the Canadian National Railway System. These bonds as they mature or are called are paid off by the Canadian National Railways, in large measure through funds raised by the issue of new bonds with Federal Government guarantee. Railway bonds guaranteed by the Government of Canada at Dec. 31, 1965 amounted to \$1,366,061,500.

For some years the Federal Government has been assisting shippers by bearing a portion of rail transportation costs on certain types of traffic moving between and within specific areas of Canada. Reimbursement to the railways for diminution of revenue resulting from these reductions has been provided through four principal plans: the Freight Rates Reduction Act (SC 1959, c. 27), which reduces for shippers, on certain classes of traffic, the full effect of the last freight rate increase authorized by the Board of Transport Commissioners for Canada in 1958; the East-West Bridge Subsidy, which provides reduced rates to shippers on certain traffic moving between Eastern and Western Canada; the Maritime Freight Rates Act (RSC 1952, c. 174), which reduces rates to shippers on traffic moving within and out of the Atlantic Provinces; and interim payments related to recommendations of the MacPherson Royal Commission. (See also p. 786.)

### Subsection 1.—Railway Operating Statistics

**Track Mileage.\***—Construction was begun in 1835 on the first railway in Canada—the short link of 14.5 miles between Laprairie and St. Johns, Que.—but only 66 miles were in operation by 1850. The first great period of construction was in the 1850s when the Grand Trunk and the Great Western Railways were built as well as numerous smaller lines. The building of the Intercolonial and the Canadian Pacific Railways contributed to another period of rapid expansion in the 1870s and 1880s. In the last period of extensive railway building (1900-17), the Grand Trunk Pacific, National Transcontinental and Canadian Northern Railways were constructed.

There has been little change in total track mileage since the 1920s. The mileage peak was reached in 1959 and there has since been a gradual decline, new construction being more than offset by abandonment of unprofitable lines. In recent years, the development of a number of large projects in districts far removed from transport facilities and the

\* Statistics for individual railways are given in DBS annual report *Railway Transport, Part III* (Catalogue No. 52-209).



opening up of the Northwest Territories have necessitated the building of branch lines. Those completed up to 1956 are listed in the 1957-58 Year Book, p. 815, and those completed from that year to 1964 are mentioned in subsequent editions. During 1965-66, the CNR completed a 12-mile line from Froomfield spur at Sarnia, Ont., to Courtright, Ont. By the spring of 1965, all track was laid on the Great Slave Lake Railway which extends 377 miles from Roma, Alta., to Hay River, N.W.T., with a 53-mile branch to Pine Point mines. Ballasting and lifting operations were completed by mid-summer 1966. Negotiations took place with several mining companies concerning provision of rail service to base-metal deposits and legislative authority was given for the construction of a 68-mile line from the vicinity of Amesdale to the vicinity of Bruce Lake in the District of Kenora, Ont.; of a 12-mile line from the vicinity of Stall Lake to the vicinity of Osborne Lake in The Pas district of Manitoba; and an 18-mile line from the vicinity of Watrous to the vicinity of Guernsey in the Regina Mining District of Saskatchewan.

The 23-mile Mackenzie addition to the PGE from Kennedy to Mackenzie near the Peace River Reservoir in northeastern British Columbia was completed in 1966, as was the first stage of the Takla Lake extension to Fort St. James. Survey work was under way for the 40-mile extension from Fort St. John to Beaton River on the route to Fort Nelson.

### 1.—Railway Track Mileage Operated, 1900-65

NOTE.—Figures of total mileage of first main track operated for 1835-1954 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

FIRST MAIN TRACK MILEAGE <sup>1</sup>		TRACK MILEAGE BY AREA AND TYPE				
Year	Miles in Operation	Area and Type of Track	1962	1963	1964	1965
	No.		No.	No.	No.	No.
1900.....	17,657	First Main—				
1905.....	20,487	Newfoundland.....	935	934	934	936
1910.....	24,731	Prince Edward Island.....	279	279	279	279
1915.....	34,882	Nova Scotia.....	1,270	1,315	1,314	1,314
1920.....	38,805	New Brunswick.....	1,782	1,771	1,760	1,730
1925.....	40,350	Quebec.....	5,349	5,361	5,163	5,238
1930.....	42,047	Ontario.....	10,137	10,117	10,073	9,950
1935.....	42,916	Manitoba.....	4,897	4,860	4,858	4,735
1940.....	42,565	Saskatchewan.....	8,588	8,577	8,566	8,522
1945.....	42,352	Alberta.....	5,683	5,683	5,682	5,723
1950.....	42,979	British Columbia.....	4,337	4,329	4,329	4,333
1955.....	43,444	Yukon Territory.....	58	58	58	58
1956.....	43,652	United States.....	339	339	339	339
1957.....	43,890	Totals, First Main.....	43,654	43,623	43,355	43,157
1958.....	44,125					
1959.....	44,209	Second main.....	2,081	2,016	2,010	1,804
1960.....	44,029	Other main.....	48	56	56	56
1961.....	43,689	Industrial.....	1,266	1,265	1,281	1,309
1962.....	43,654	Yard and sidings.....	11,710	11,551	11,541	11,676
1963.....	43,623					
1964.....	43,355	Grand Totals <sup>2</sup> .....	58,759	58,511	58,243	58,002
1965.....	43,157					

<sup>1</sup> Defined as a single track extending the entire distance between terminals, upon which the length of the road is based.

<sup>2</sup> Newfoundland included from 1950.

<sup>3</sup> Excludes joint track amounting to 55 miles in 1962, 61 miles in 1963, 58 miles in 1964 and 55 miles in 1965.

**Rolling-Stock.**—Table 2 shows the numbers of the various types of freight and passenger equipment in operation in 1959 and in 1965, revealing a generally downward trend over the period; however, these figures do not reflect the offsetting trend toward larger, more efficient cars and locomotives or the steady improvement in speed of movement facilitated by modernized handling and terminal services. Each year hundreds of units, particularly freight cars, are converted and modified to make them suitable for specific types of traffic or are replaced by special-purpose equipment designed for distinctive hauling jobs. The average capacity of all freight cars was 53.8 tons in 1965 compared with 51.1 tons in 1959. Also, although the number of diesel-electric locomotives in service has remained

fairly static over this period, it should be noted than an extensive program of power up-grading has been followed by the railway companies. The combined tractive effort (the force exerted by powered equipment measured at the rim of the driving wheels) of all locomotives in 1965 averaged 58,571 lb. as compared with 53,368 lb. in 1959.

## 2.—Railway Rolling-Stock in Operation as at Dec. 31, 1959 and 1965

Type	1959	1965	Type	1959	1965
	No.	No.		No.	No.
<b>Locomotives</b> .....	<b>4,720</b>	<b>3,323</b>	<b>Freight Cars</b> .....	<b>194,512</b>	<b>182,090</b>
Steam—			Automobile.....	7,270	3,696
Coal-burning.....	1,143	—	Ballast.....	3,140	2,906
Oil-burning.....	371	—	Box.....	114,181	105,822
Diesel-electric.....	3,155	3,238	Flat.....	12,270	13,475
Electric.....	51	22	Gondola.....	20,428	19,332
Other.....	—	63	Hopper.....	15,601	18,157
<b>Passenger Cars</b> .....	<b>5,456</b>	<b>3,638</b>	Ore.....	5,964	5,964
Coach.....	1,409	984	Refrigerator.....	10,155	7,936
Combination.....	182	114	Stock.....	5,025	3,150
Colonist.....	96	41	Tank.....	455	499
Dining.....	159	153	Other.....	23	1,153
Parlour.....	143	130			
Sleeping.....	919	641	<b>Privately Owned Cars</b> .....	<b>4,853</b>	<b>6,275</b>
Baggage, express and postal.....	2,353	1,432	Tank.....	4,809	5,994
Self-propelled.....	128	113	Other.....	44	281
Other.....	67	30			

<sup>1</sup> Road freight units. <sup>2</sup> Includes those of non-rail industrial firms such as oil, chemical and railway car leasing companies which furnish freight cars to, or on behalf of, any railway line.

**Passenger and Freight Traffic.**—Table 3 shows passenger and freight statistics for all railways for the years 1961-65. A separate analysis of the operations and traffic of the Canadian National Railways is given at pp. 797-799.

## 3.—Statistics of Passenger and Freight Service and Revenue, 1961-65

Item	1961	1962	1963	1964	1965
<b>Passenger Service</b>					
Revenue passenger-train miles <sup>1</sup> .....	'000 31,131	29,217	28,239	28,631	29,397
Passenger-train car miles <sup>1</sup> .....	" 311,912	296,950	285,942	308,941	306,574
Passengers carried <sup>2</sup> .....	" 18,784	19,258	20,636	22,915	24,616
Passenger-miles.....	" 1,960,591	2,018,842	2,069,565	2,681,234	2,664,115
Passenger-miles per mile of line.....	No. 43,631	45,048	46,260	60,444	60,040
Average receipts per passenger-mile.....	cts. 3.12	3.00	2.88	2.38	2.47
Average receipts per passenger.....	\$ 3.26	3.15	2.89	2.78	2.67
Average passenger journey.....	miles 104	105	100	117	108
Average passengers per train.....	No. 63	69	73	94	91
Passenger-train revenue per passenger-train mile.....	\$ 3.32	3.56	3.51	3.64	3.68
<b>Freight Service</b>					
Revenue freight-train miles.....	'000 60,593	60,308	62,639	66,785	67,961
Revenue freight-train car miles <sup>3</sup> .....	" 3,234,586	3,256,175	3,465,076	3,768,687	3,807,321
Freight carried <sup>4</sup> .....	'000 tons 153,202	164,112	172,897	190,160	198,494
Freight ton-miles.....	" 65,823,403	67,937,162	75,796,023	85,032,999	87,190,353
Freight ton-miles per mile of line.....	" 1,464	1,516	1,694	1,917	1,965
Freight receipts per ton per mile.....	cts. 1.54	1.50	1.41	1.37	1.39
Receipts per ton hauled.....	\$ 6.62	6.34	6.21	6.17	6.15
Average length of freight haul.....	miles 430	422	441	448	443
Average train load, revenue tons.....	No. 1,086	1,127	1,210	1,273	1,283
Average load per loaded car mile.....	tons 33.79	34.71	36.81	37.92	38.54
Revenue per freight-train mile.....	\$ 16.72	16.91	17.04	17.51	17.82

<sup>1</sup> Includes express, baggage, mail and other cars. <sup>2</sup> Duplications included. <sup>3</sup> Includes cabooses miles but excludes miles made in passenger and non-revenue trains. <sup>4</sup> Excludes traffic handled by more than one railway; see Table 4 for details of freight carried.

The tonnage of revenue freight carried (including national loadings and receipts from United States connections) continues to increase year by year, the total in 1965 being 3.8 p.c. higher than in 1964. All the main commodity groups except agricultural products and animal products contributed to the increase. Of the 196,816,887 tons carried in 1965 (excluding freight handled by more than one railway and in intermediate switching), mine products accounted for 41.9 p.c., manufactures and miscellaneous products for 31.9 p.c., agricultural products 15.4 p.c., forest products 9.4 p.c., animal products 0.8 p.c., and less-than-carload freight for 0.6 p.c.; in 1964 the proportions were 39.7 p.c., 30.8 p.c., 18.8 p.c., 9.3 p.c., 0.9 p.c., and 0.5 p.c., respectively.

#### 4.—Commodities Hauled as Freight by Railways, 1961-65

NOTE.—In this table duplications are eliminated, i.e., the same freight handled by two or more railways is counted only once. The statistics do not include the United States lines of the Canadian National Railways, but the link of the Canadian Pacific Railway line across Maine, U.S.A., is included, as are the Canadian sections of United States railways.

Commodity	1961	1962	1963	1964	1965
	tons	tons	tons	tons	tons
<b>Agricultural Products</b> .....	<b>28,012,441</b>	<b>25,177,337</b>	<b>29,303,974</b>	<b>35,686,429</b>	<b>30,369,784</b>
Wheat.....	15,155,289	13,403,510	16,311,535	21,154,965	17,173,187
Corn.....	838,465	1,046,821	966,449	1,037,039	1,090,003
Oats.....	982,668	935,985	1,556,288	1,229,384	1,344,012
Barley.....	2,710,432	1,740,092	2,189,993	2,706,816	2,253,706
Other grain.....	278,434	361,658	308,139	344,983	338,361
Flour, wheat.....	1,480,964	1,504,838	1,545,738	1,859,599	1,528,737
Other mill products.....	1,697,726	1,489,866	1,593,722	2,253,442	1,819,690
Potatoes, other than sweet.....	611,646	806,160	797,953	845,992	878,713
Sugar beets.....	650,597	477,670	609,150	618,206	509,311
Flaxseed.....	481,201	451,432	368,712	656,616	502,697
Other agricultural products.....	3,125,019	2,959,305	3,056,295	2,979,386	2,931,367
<b>Animal Products</b> .....	<b>1,619,212</b>	<b>1,508,284</b>	<b>1,529,037</b>	<b>1,664,139</b>	<b>1,466,380</b>
Cattle and calves.....	278,954	231,417	194,571	233,647	247,557
Other livestock.....	163,513	144,906	126,960	129,058	108,164
Meats and other edible packing-house products.....	617,970	591,605	672,350	757,418	635,258
Other animal products.....	558,775	540,356	535,156	544,016	475,401
<b>Mine Products</b> .....	<b>61,388,644</b>	<b>68,236,842</b>	<b>71,828,970</b>	<b>75,242,381</b>	<b>82,458,654</b>
Coal, bituminous.....	10,461,389	10,184,111	10,002,904	10,449,727	10,725,707
Other coal and coke.....	2,720,659	2,368,085	2,356,378	2,554,441	2,715,381
Iron ore.....	16,897,166	24,239,159	27,698,186	25,725,343	29,716,750
Ores and concentrates.....	9,420,171	8,012,497	7,364,175	9,344,104	11,508,223
Gravel and sand.....	5,793,376	6,258,480	6,513,801	7,770,785	7,299,497
Stone and rock, broken, ground, and crushed.....	5,237,255	5,017,049	5,430,004	5,387,391	6,123,381
Salt.....	1,275,427	1,587,575	1,194,617	1,268,105	1,461,173
Phosphate rock.....	796,295	1,024,374	1,023,821	1,159,566	1,425,307
Sulphur.....	532,604	775,359	1,309,600	1,890,805	2,060,798
Asbestos, not further processed than milled.....	1,073,129	1,073,988	1,054,276	1,206,608	1,176,143
Gypsum, crude.....	4,002,471	4,451,558	4,841,053	4,888,650	4,709,639
Other mine products.....	3,178,702	3,244,579	3,040,155	3,596,856	3,536,660
<b>Forest Products</b> .....	<b>14,491,704</b>	<b>15,441,325</b>	<b>15,927,443</b>	<b>17,731,444</b>	<b>18,443,714</b>
Logs, butts, bolts, posts, poles and piling, wooden.....	2,057,380	2,602,679	2,632,962	2,878,683	2,728,026
Pulpwood.....	4,574,296	4,867,930	4,857,912	6,026,932	7,213,616
Lumber, shingles and lath.....	6,398,233	6,608,073	6,941,623	7,241,194	6,871,158
Veneer, plywood, and built-up wood.....	859,210	855,776	887,076	989,971	1,061,932
Other forest products.....	602,585	506,867	607,870	594,664	568,982
<b>Manufactures and Miscellaneous</b> .....	<b>46,378,066</b>	<b>49,342,838</b>	<b>52,062,773</b>	<b>58,413,648</b>	<b>62,848,885</b>
Gasoline and petroleum products.....	6,887,884	6,962,657	7,647,090	8,124,687	8,854,208
Fertilizers.....	2,207,462	2,523,154	3,352,315	3,693,204	4,557,508
Iron and steel (bar, sheet, structural, pipe).....	3,637,000	3,709,838	4,056,599	5,472,140	5,358,719
Automobiles, trucks and parts.....	1,673,124	2,003,748	2,142,845	2,278,802	2,795,878
Cement.....	1,545,258	1,559,580	1,451,026	1,787,747	2,037,131
Wood pulp.....	2,688,225	3,048,415	3,186,693	3,431,137	3,538,129
Newsprint.....	4,397,864	4,232,493	4,121,218	4,497,987	4,772,914



## 4.—Commodities Hauled as Freight by Railways, 1961-65—concluded

Commodity	1961	1962	1963	1964	1965
	tons	tons	tons	tons	tons
<b>Manufactures and Miscellaneous</b> —concluded					
Paper products and articles.....	2,353,202	2,526,684	2,569,820	2,765,142	2,932,569
Food products.....	1,361,756	1,402,267	1,445,897	1,545,857	1,552,481
Feed, animal and poultry.....	1,233,505	1,487,652	1,555,022	1,618,957	1,546,327
Scrap iron and scrap steel.....	1,139,926	1,131,288	1,413,518	1,656,025	2,189,398
Other manufactures and miscellaneous.....	17,252,860	18,755,062	19,120,730	21,541,963	22,713,623
<b>Less-than-Carload Lots.....</b>	<b>1,190,250</b>	<b>1,223,715</b>	<b>1,083,429</b>	<b>958,344</b>	<b>1,229,470</b>
<b>Grand Totals.....</b>	<b>153,080,317</b>	<b>160,930,341</b>	<b>171,735,626</b>	<b>189,696,385</b>	<b>196,816,887</b>

**Railway Accidents.**—Accidents shown in Table 5 include all those in which railway trains were involved and accidents on railway property; all passengers injured are included but, for employees, only those who were kept from work for at least three days during the 10 days following the accident are recorded. The classification of accidents used in reporting other DBS statistics treats collisions between motor vehicles and trains as motor vehicle accidents. Therefore, care should be exercised when compiling total accidental deaths of all kinds or when comparing results of accidents of different kinds, such as train and motor vehicle.

## 5.—Persons Killed or Injured on Railways, by Specified Cause, 1963-65

Item	1963		1964		1965	
	Killed	Injured	Killed	Injured	Killed	Injured
	No.	No.	No.	No.	No.	No.
<b>ACCIDENTS RESULTING FROM MOVEMENT OF TRAINS, LOCO- MOTIVES OR CARS</b>						
<b>Class of Person—</b>						
Passengers.....	2	157	8	138	2	273
Employees.....	23	853	23	1,078	20	1,180
Trespassers.....	43	45	61	42	50	53
Non-trespassers.....	158	517	159	493	157	557
Postal clerks, expressmen, etc.....	—	15	—	18	—	14
<b>Totals.....</b>	<b>226</b>	<b>1,587</b>	<b>251</b>	<b>1,769</b>	<b>229</b>	<b>2,077</b>
<b>Description of Accidents (employees and passengers only)—</b>						
Coupling and uncoupling.....	—	40	—	45	1	56
Collisions.....	4	50	11	79	6	94
Derailments.....	3	82	1	18	2	143
Falling from trains or cars.....	4	41	1	59	2	42
Getting on or off trains.....	7	231	2	284	2	310
Struck by trains, etc.....	6	14	10	15	4	18
Other causes.....	1	552	6	716	5	790
<b>Totals.....</b>	<b>25</b>	<b>1,010</b>	<b>31</b>	<b>1,216</b>	<b>22</b>	<b>1,453</b>
<b>ALL OTHER ACCIDENTS</b>						
<b>Class of Person—</b>						
Employees.....	10	1,912	10	2,054	15	2,332
Passengers.....	—	55	—	72	—	57
Others.....	1	39	2	77	1	73
<b>Totals.....</b>	<b>11</b>	<b>2,006</b>	<b>12</b>	<b>2,203</b>	<b>16</b>	<b>2,462</b>

**Finances.**—Tables 6 to 9 give information on capital liability and capital investment in road and equipment, operating revenues and expenses, employees and their earnings for all railways.\* Financial statistics of government-owned railways are given separately and in detail in Subsection 2. A Uniform Classification of Accounts for common carriers became effective for the Canadian National and the Canadian Pacific Railways on Jan. 1, 1956, and for all other common carrier railways on Jan. 1, 1957. In transportation statistics a distinction is made between expenditures and expenses. In the following data, the term 'expenses' is used as defined in the Uniform Classification of Accounts and refers to the expenses of furnishing rail transportation service and of operations incident thereto, including maintenance and depreciation of the plant used in such service.

### 6.—Capital Liability of Railways, 1956-65

NOTE.—Figures from 1876 will be found in the corresponding table of previous Year Books beginning with the 1927-28 edition.

(Exclusive of Canadian railway capital owned by Canadian railways)

Year	Stocks	Funded Debt	Total <sup>1</sup>	Year	Stocks	Funded Debt	Total <sup>1</sup>
	\$	\$	\$		\$	\$	\$
1956.....	2,572,487,313	1,612,706,551	4,185,193,864	1961.....	2,748,537,919	2,234,316,735	4,982,854,654
1957.....	2,565,559,683	1,764,660,210	4,330,219,893	1962.....	2,769,152,492	2,245,189,028	5,014,341,520
1958.....	2,646,659,697	1,953,114,826	4,599,774,523	1963.....	2,791,044,973	2,183,556,139	4,974,601,112
1959.....	2,669,062,269	2,122,675,213	4,791,737,482	1964.....	2,815,148,215	2,181,454,852	4,996,603,067
1960.....	2,725,827,684	2,244,571,812	4,970,399,496	1965.....	2,843,118,935	2,187,613,273	5,030,732,208

<sup>1</sup> Exclusive of approximately \$40,000,000 railway debt in Newfoundland.

### 7.—Capital Invested in Railway Road and Equipment Property, 1961-65

NOTE.—Credit entries in this table result when the annual "write-offs" are greater than the annual investment in any category.

Investment	1961	1962	1963	1964	1965
	\$	\$	\$	\$	\$
Road.....	72,244,687	70,674,769	125,463,519	74,388,731	84,097,911
Equipment.....	Cr. 30,683,878	7,258,657	Cr. 16,753,029	40,086,021	100,984,284
General.....	3,152,244	243,729	84,786	45,989	325,546
Undistributed.....	40,971,544	12,905,861	Cr. 2,626,787	Cr. 7,538,650	Cr. 34,491,325
CNR non-rail property....	16,606,167	10,513,908	Cr. 3,771,974	7,219,816	4,763,492
CPR " ".....	26,492,752	2,631,950	Cr. 8,845,548	Cr. 17,639,710	Cr. 45,266,763
Other " ".....	Cr. 27,365	Cr. 189,997	2,446,787	2,831,244	4,006,946
<b>Totals.....</b>	<b>85,684,597</b>	<b>90,595,558</b>	<b>106,168,489</b>	<b>106,982,091</b>	<b>150,916,416</b>
Cumulative investment to Dec. 31.....	6,830,390,939	6,920,986,497	7,027,154,986	7,134,137,077	7,285,053,493

**Revenues and Expenses.**—Railway operating revenues and expenses continue to rise, both reaching peak levels in 1965; increases over 1964 amounted to 3.6 p.c. and 4.1 p.c., respectively, and because the increase in expenses was higher than that in revenues, net earnings decreased.

Of the total operating expenses in 1965 amounting to \$1,291,840,958, those connected with the transporting of persons and property, such as station, yard and terminal services

\* Statistics for individual railways are given in DBS annual report *Railway Transport*, published in six Parts (Catalogue Nos. 52-207—52-212); details on capital liability are given in Part II (Catalogue No. 52-208).

and employees, wharves, fuel, etc., accounted for 38.2 p.c.; equipment maintenance for 22.1 p.c.; road maintenance for 19.4 p.c.; rents and taxes for 6.9 p.c.; expenses connected with traffic soliciting, such as advertising and information, ticket and freight offices, etc., for 2.7 p.c.; and miscellaneous expenses, including incidentals, dining and buffet services, grain elevators, etc., for the remaining 10.7 p.c. These proportions have remained fairly constant in recent years.

### 8.—Operating Revenues and Expenses of Railways, 1956-65

NOTE.—Operating revenues and expenses from 1875 are given in previous editions of the Year Book beginning with the 1916-17 edition.

Year	Total Operating Revenues	Total Operating Expenses	Ratio of Operating Expenses to Operating Revenues	Per Mile of Line			Freight- Train Revenue per Freight- Train Mile	Passenger- Train Revenue per Passenger- Train Mile
				Operating Revenues	Operating Expenses	Net Operating Revenues		
	\$	\$	p.c.	\$	\$	\$	\$	\$
1956.....	1,300,623,923	1,171,338,574	90.06	29,047	26,159	2,888	12.75	3.16
1957.....	1,263,147,980	1,203,530,146	95.28	28,171	26,841	1,330	13.85	3.30
1958.....	1,163,735,417	1,132,277,504	97.30	25,766	25,070	696	14.51	3.11
1959.....	1,224,567,928	1,166,306,724	95.24	27,093	25,804	1,289	15.48	3.29
1960.....	1,151,655,456	1,109,470,426	96.34	25,544	24,608	936	15.54	3.46
1961.....	1,156,480,700	1,114,432,525	96.36	25,736	24,800	936	16.72	3.32
1962.....	1,165,296,722	1,119,662,072	96.08	26,002	24,984	1,018	16.91	3.56
1963.....	1,210,209,799	1,149,530,526	94.99	27,051	25,695	1,356	17.04	3.51
1964.....	1,324,422,492	1,241,258,655	93.72	29,857	27,982	1,875	17.51	3.64
1965.....	1,372,304,959	1,291,840,958	94.14	30,927	29,114	1,813	17.82	3.68

*Employment, Salaries and Wages.*—Rail employment in 1965 was down slightly from the preceding year. Over the ten-year period 1956-65, employment dropped 28.1 p.c. but the average annual salary for the industry was 48.3 p.c. higher and total compensation paid was up 6.6 p.c. It should be noted that employee data for 1964 and 1965 were based on a new Uniform Canadian Classification of Railway Employees in which a bi-monthly method of counting was introduced; this method tends to reduce the number of employees by from 2 to 3 p.c. Details are given in DBS publication *Railway Transport, Part VI* (Catalogue No. 52-212).

### 9.—Railway Employees and Their Earnings, 1956-65

NOTE.—Figures include employees and wages for 'outside' operations amounting to from 3 to 6 p.c. of total employees and from 2 to 5 p.c. of total salaries and wages. Figures for 1912-55 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Year	Employees <sup>1</sup>	Total Salaries and Wages	Average Salaries and Wages	Ratio of Total Payroll (charged to operating expenses) to—	
				Operating Revenues	Operating Expenses
	No.	\$	\$	p.c.	p.c.
1956.....	215,324	780,135,918	3,623	50.6	55.9
1957.....	212,426	791,529,117	3,726	51.4	53.9
1958.....	192,809	757,907,896	3,931	52.7	54.3
1959.....	187,981	780,031,534	4,150	51.5	54.2
1960.....	175,537	740,475,804	4,218	52.0	54.2
1961.....	166,081	748,097,831	4,504	52.7	54.9
1962.....	162,861	747,301,214	4,589	51.4	53.7
1963.....	156,527 <sup>2</sup>	756,862,741	4,835	50.4	53.1
1964.....	157,643 <sup>2</sup>	798,537,454	5,065	49.1	52.3
1965.....	154,832 <sup>2</sup>	831,818,991	5,372	49.3	52.4

<sup>1</sup> Includes employees engaged in communications, express cartage, highway transport (rail) and outside operations.

<sup>2</sup> See text above.



### Subsection 2.—The Canadian National Railway System\*

In view of the interest in Canada's publicly owned railway, the Canadian National Railway System is given separate treatment in this Subsection. More detailed information than can be given here is obtainable from DBS annual report *Canadian National Railways* (Catalogue No. 52-201).

**Financial Statistics.**—The original financial structure of the CNR and the steps taken through the Capital Revision Acts of 1937 and 1952 to alleviate the burden of interest debt undertaken by the company on its formation in 1923 are described in the 1955 Year Book, pp. 840-847. Briefly, the Capital Revision Act of 1937 wrote off all loans that had been made to cover deficits and also unpaid interest on loans, and certain loans made for the purpose of additions and betterments were converted to equity capital, relieving the CNR from paying fixed charges on this amount. Under the 1952 Capital Revision Act, 50 p.c. of the company's interest-bearing debt was changed to preferred stock on which, after settling income taxes, a dividend of 4 p.c. is paid on earnings. Also, for a term of ten years ended Jan. 1, 1962, the Railway was not obliged to pay interest on \$100,000,000 of its long-term debt. The Government is authorized to buy additional preferred stock annually in amounts related to the company's gross revenues. As a consequence, the proportion of total capitalization represented by equity capital in shareholders' account was raised from 34.5 p.c. at Dec. 31, 1951 to 67.2 p.c. at Jan. 1, 1952, and the proportion of borrowed capital was correspondingly reduced. By the end of 1965, the proportion represented by equity capital in shareholders' account was 51.0 p.c.

\* The Hudson Bay Railway, formerly managed and operated for the Federal Government by the CNR, was absorbed into the Canadian National Railway System on Jan. 1, 1958, to be operated in the same manner as other Canadian Government railway lines. Statistics of the Hudson Bay Railway are therefore included with CNR data for 1958 and subsequent years.

### 10.—Capital Structure of the Canadian National Railway System as at Dec. 31, 1956-65

At Dec. 31—	Shareholders' Capital		Funded Debt Held by Public		Government Loans and Appropriations—Active Assets in Public Accounts	Total
	Government of Canada Shareholders' Account	Capital Stock Held by Public	Guaranteed by Federal and Provincial Governments	Other		
	\$	\$	\$	\$	\$	\$
1956.....	1,616,270,966	4,508,670	794,482,906	25,086,606	353,664,828	2,794,013,976
1957.....	1,639,451,306	4,505,870	730,346,711	17,978,788	623,967,851	3,016,250,526
1958.....	1,704,387,845	4,504,203	1,024,710,205	9,098,765	484,791,699	3,227,492,717
1959.....	1,723,909,722	4,503,549	1,335,510,205	5,548,765	345,684,052	3,415,156,293
1960.....	1,721,143,162	4,499,284	1,677,209,478	3,098,765	148,021,700	3,553,972,389
1961.....	1,744,673,266	4,499,273	1,670,653,176	2,423,765	164,593,150	3,586,842,630
1962.....	1,767,976,925	4,499,261	1,630,895,308	2,423,765	209,026,793	3,614,822,052
1963.....	1,792,380,188	4,485,785	1,378,875,000	2,023,764	410,354,762	3,588,119,499
1964.....	1,817,243,906	4,345,185	1,367,811,500	2,023,764	410,354,762	3,601,779,117
1965.....	1,843,209,298	4,345,185	1,366,061,500	2,023,764	410,354,762	3,625,994,509

In Table 11 the assets of the Canadian National Railway System as at Dec. 31, 1964 and 1965 are shown.

### 11.—Assets of the Canadian National Railway System as at Dec. 31, 1964 and 1965

NOTE.—Assets as at the time of consolidation of the system (Dec. 31, 1922) are given in the 1963-64 Year Book, p. 764.

Account	Dec. 31, 1964	Dec. 31, 1965	Account	Dec. 31, 1964	Dec. 31, 1965
	\$	\$		\$	\$
<b>Current Assets</b> .....	<b>226,809,161</b>	<b>252,586,015</b>	<b>Investments—concl.</b>		
Cash.....	37,837,795	30,210,047	Improvements on leased property.....	1,384,654	1,384,318
Special deposits.....	26,406	26,369	Non-rail property.....	142,670,141	147,433,633
Traffic accounts receivable.....	3,254,405	2,752,377	Investments in affiliated companies.....	288,835,590	288,892,167
Agent and conductor balances.....	48,109,500	54,582,813	Other investments.....	4,464,431	3,853,705
Other accounts receivable.....	27,386,834	64,193,969	<b>Deferred Assets</b> .....	<b>28,112,365</b>	<b>27,511,771</b>
Government of Canada due on deficit account.....	27,025,904	12,017,755	Working fund advances.....	746,850	736,930
Material and supplies.....	61,599,783	71,083,427	Insurance and other funds.....	17,000,000	17,042,171
Interest and dividends receivable.....	4,010,276	2,990,874	Other deferred assets.....	10,365,515	9,732,670
Other current assets.....	17,558,258	14,728,384	<b>Unadjusted Debits</b> .....	<b>29,154,737</b>	<b>30,089,173</b>
<b>Investments</b> .....	<b>4,376,878,642</b>	<b>4,468,857,050</b>	Prepayments.....	2,327,563	2,215,986
Road and equipment property.....	3,939,523,826	4,027,288,227	Discount on funded debt.....	17,358,514	15,996,908
			Other unadjusted debits.....	9,468,660	11,876,279
			<b>Totals</b> .....	<b>4,660,954,905</b>	<b>4,779,044,009</b>

The financial details presented in Table 12 are those of the entire Canadian National Railway System, including both Canadian and United States operations. Revenues and expenses include those of express and commercial communications and highway transport (rail) operations. In conformity with the requirements of the Uniform Classification of Accounts, tax accruals and rents are charged to operating expenses.

### 12.—Total Revenue, Operating Expenses, Net Revenue, Fixed Charges and Deficits of the Canadian National Railway System (Canadian and United States Operations), 1956-65

NOTE.—Figures for 1911-55 are given in the corresponding table of previous Year Books beginning with the 1936 edition.

Year	Total Operating Revenue	Total Operating Expenses	Income Available for Fixed Charges	Total Fixed Charges	Net Income or Deficit <sup>1</sup>	Cash Deficit or Surplus <sup>2</sup>
	\$	\$	\$	\$	\$	\$
1956.....	774,800,647	728,008,837	57,623,710	31,782,991	Cr. 25,840,719	Cr. 26,076,951 <sup>3</sup>
1957.....	753,165,964	755,214,378	6,913,660	36,971,680	Dr. 30,058,020	Dr. 29,572,541
1958.....	704,947,410	719,211,865	Dr. 4,779,895	46,521,236	" 51,301,131	" 51,591,424
1959.....	740,165,041	741,852,260	8,416,237	52,918,886	" 44,502,649	" 43,588,290
1960.....	693,141,106	705,818,310	1,504,828	69,469,961	" 67,965,133	" 67,496,777
1961.....	710,305,173	722,147,583	5,539,970	73,404,523	" 67,864,553	" 67,307,772
1962.....	738,324,754	738,882,680	23,308,683	74,443,482	" 51,134,799	" 48,919,454
1963.....	762,350,334	752,829,782	36,622,626	76,252,867	" 39,630,241	" 43,013,517
1964.....	822,483,679	811,471,248	37,886,007	74,673,809	" 36,787,802	" 38,725,904
1965.....	870,250,352	855,687,971	43,547,754	73,808,456	" 30,260,702	" 33,414,884

<sup>1</sup> Includes appropriations for insurance fund.

<sup>2</sup> Contributed by or paid to the Government of Canada.

<sup>3</sup> Paid to the Government of Canada as a dividend on 4-p.c. preferred stock.

**Mileage and Traffic.**—At Dec. 31, 1965, the length of first main track owned by the Canadian National Railways (including electric lines and lines in the United States but excluding lines of the Northern Alberta Railways and Toronto Terminals Railway controlled jointly by the Canadian National and the Canadian Pacific Railways) was 24,265 miles.

### 13.—Train Traffic Statistics of the Canadian National Railways (Canadian and United States Lines), 1963-65

NOTE.—Includes electric lines.

Mileage and Traffic	1963	1964	1965
<b>Train Mileage</b> .....miles	<b>54,679,182</b>	<b>58,135,511</b>	<b>60,209,381</b>
Passenger service....."	17,079,631	18,348,086	19,842,789
Freight service....."	35,796,950	38,240,893	38,978,560
Work service....."	1,802,601	1,546,532	1,888,032
<b>Passenger-Train Car Mileage</b> .....miles	<b>177,232,023</b>	<b>195,491,301</b>	<b>213,883,541</b>
Coaches and combination (excl. work service)...."	41,268,166	47,304,522	52,200,423
Motor unit cars....."	3,877,880	3,952,648	4,175,168
Parlour, sleeping and dining cars....."	49,022,660	64,319,706	72,389,721
Baggage, mail, express, etc....."	83,063,317	79,914,425	85,118,229
<b>Freight-Train Car Mileage</b> .....miles	<b>1,965,622,868</b>	<b>2,110,254,847</b>	<b>2,148,550,148</b>
Loaded freight....."	1,181,953,889	1,265,929,716	1,287,931,072
Empty freight....."	746,854,265	804,111,089	819,787,190
Caboose....."	36,814,714	40,214,042	40,831,886
<b>Work-Train Car Mileage</b> .....miles	<b>2,869,321</b>	<b>2,651,373</b>	<b>2,786,107</b>
<b>Passenger Traffic—</b>			
Passengers carried (earning revenue).....No.	13,598,961	15,500,649	17,414,270
Passengers carried (earning revenue) one mile...."	1,189,051,239	1,613,350,069	1,750,906,364
Passenger-miles per mile of road....."	48,121	65,325	71,139
Average passenger journey.....miles	87.4	104.1	100.5
Average amount received per passenger.....\$	3.27	3.34	3.35
Average amount received per passenger-mile....\$	0.03730	0.03212	0.03332
<b>Freight Traffic—</b>			
Revenue freight carried.....tons	84,078,393	92,632,736	99,204,609
Revenue freight carried one mile....."	40,171,173,489	44,516,285,706	46,130,503,687
Revenue freight carried one mile per mile of road....."	1,625,733	1,802,487	1,874,264
Total (all classes) freight carried one mile per mile of road....."	1,649,226	1,821,400	1,894,521
Average hauls, revenue freight.....miles	477.8	480.6	465.0
Gross ton-miles per freight train hour.....No.	56,561	59,034	59,638
Freight revenue per ton.....\$	6.57	6.51	6.44
Freight revenue per ton-mile.....\$	0.01375	0.01355	0.01385

## Section 2.—Express Companies

There are five express organizations operating in Canada. The Canadian Pacific Express exists as a subsidiary of the Canadian Pacific Railway Company, and the express business of the Algoma Central and Hudson Bay Railway, the Canadian National Railway System and the Northern Alberta Railways Company is handled by departments of the respective railways. The Railway Express Agency Incorporated of the United States operates mainly over the Canadian sections of U.S. rail lines.

Express companies are organized under federal legislative authority. They are primarily engaged in the rapid transportation of package freight but their services also include custom brokerage, money orders, travellers cheques and other financial paper transactions. Recently, the major railways have introduced a unified service for handling small package express freight and less-than-carload-lot shipments, using the efficient facilities of their rail, piggyback and highway transport services to provide fast and competitive movement of goods. The eventual effects of this changing concept of express service will not be evident statistically until the integration processes are fully completed.

No statistics are available on the volume of express freight handled because much of it consists of parcels and small lots that cannot be classified. Table 14 shows the mileages operated by and the financial statistics of the express agencies for 1961-65 with figures by company for 1965.



## 14.—Summary Statistics of Express Companies, 1961-65

NOTE.—Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1927-28 edition.

Year or Company	Mileages Operated in Canada <sup>1</sup>	Gross Earnings	Operating Expenses <sup>2</sup>	Express Privileges <sup>3</sup>	Net Operating Revenue
	No.	\$	\$	\$	\$
1961.....	65,523	81,098,805	62,674,794	17,875,713	548,298
1962.....	70,985	83,877,337	64,086,906	19,041,953	748,478
1963.....	74,293 <sup>4</sup>	79,031,998	62,127,111	16,167,030	737,857
1964.....	76,025 <sup>4</sup>	81,728,007	64,918,242	16,162,703	647,062
1965.....	80,265 <sup>4</sup>	85,927,546	67,329,413	17,949,002	649,131
<b>1965</b>					
Algoma Central and Hudson Bay Rly.	322	67,623	49,377	22,800	Dr. 4,554
Canadian National Express.....	60,322	47,348,653	37,143,470	9,711,597	493,586
Canadian Pacific Express.....	16,659	31,998,793	25,665,947	6,186,146	146,700
Northern Alberta Railways.....	1,841	245,218	203,872	41,346	—
Railway Express Agency, Inc.....	1,121 <sup>4</sup>	6,267,259	4,266,747	1,987,113	13,399

<sup>1</sup> Over railways, boat lines, motor carrier and aircraft routes. <sup>2</sup> Includes tax accruals. <sup>3</sup> Amounts paid by express companies to the carriers, i.e., railways, steamship lines, etc., for transporting express matter. <sup>4</sup> Excludes airline mileages of the Railway Express Agency.

Business transacted by express companies in financial paper is showing a downward trend, declining from \$140,519,846 in 1961 to \$135,659,423 in 1965. The latter was made up of: domestic and foreign money orders, \$107,926,993; C.O.D. cheques, \$17,158,809; travellers cheques, \$10,522,794; and telegraphic transfers, \$50,827. The major decrease was shown in the amount of money orders issued.

The number of persons employed by express companies has also decreased over the five-year period. Employment (full-time and part-time) was provided for 6,565 persons in 1965, to whom \$30,920,877 was paid in salaries and wages; this compared with 10,454 employees in 1961, receiving \$42,405,948 in salaries and wages. Commissions paid dropped from \$2,733,174 to \$1,684,263 over the same period.

## PART III.—ROAD TRANSPORT\*

Highways and motor vehicles are herein treated as related features of transportation. An introductory Section summarizes provincial regulations regarding motor vehicles and motor traffic.

## Section 1.—Provincial Motor Vehicle and Traffic Regulations†

NOTE.—It is obviously impossible to include here the great mass of detailed regulations in force in each province and territory; only the more important general information is given. The source of information for detailed regulations for each province and territory is given at pp. 803-804.

The registration of motor vehicles and the regulation of motor vehicle traffic lies within the legislative jurisdiction of the provincial and territorial governments. Regulations common to all provinces and territories are summarized as follows.

**Operators' Licences.**—The operator of a motor vehicle must be over a specified age, usually 16 years (17 in Newfoundland and 18 for class A licence in Alberta), and must carry a licence, obtainable in most provinces only after prescribed qualification tests. Such

\* Except as otherwise indicated, the material in this Part has been revised in the Transportation Division, Dominion Bureau of Statistics.

† Revised according to information received from the respective provincial authorities concerned.

licence is renewable annually in Newfoundland, Prince Edward Island, Nova Scotia, Saskatchewan and the Northwest Territories; in Alberta and British Columbia it is renewable every five years; in New Brunswick, Quebec and Manitoba it is renewable every two years and, in Quebec, expires on the licensee's birth date; in Ontario a licence is issued on a three-year basis and expires on the licensee's birth date. Special licences are required for chauffeurs in all provinces except Newfoundland and in some jurisdictions special licences may be granted to those who have not reached the specified age.

**Motor Vehicle Regulations.**—All motor vehicles and trailers must be registered annually, with the payment of specified fees, and must carry two registration plates, one on the front and one on the back of the vehicle (one only for the back of trailers); in New Brunswick one licence plate is issued to be attached to the front of truck tractors and to the rear of all other vehicles; in Prince Edward Island one plate is issued for motorcycles, to be mounted on rear. In most provinces, in event of sale the registration plates stay with the vehicle but in Quebec, Manitoba, Saskatchewan and Alberta the plates are retained by the owner. In Nova Scotia, vehicles pass from owner to owner by due process of law and title must be secured before issue of plates and permit. A change of ownership of the vehicle must be recorded with the registration authority. However, exemption from registration is granted for a specified period (usually at least 90 days, except in Quebec where the maximum is 90 days, in British Columbia where it is six months and in Ontario where it is six months for vehicles from other provinces and three months for vehicles registered outside Canada) in any year to visitors' private vehicles registered in another province or a state that grants reciprocal treatment. Regulations require a safe standard of efficiency in the mechanism of the vehicle and of its brakes and stipulate that equipment include non-glare headlights, a proper rear light, a muffler, a windshield wiper, a rear-vision mirror, and a warning device.

**Traffic Regulations.**—In all provinces and territories, vehicles keep to the right-hand side of the road. Everywhere motorists are required to observe traffic signs, lights, etc., placed at strategic points on highways and roads. The speed limit in Prince Edward Island, New Brunswick and Quebec is 60 miles an hour in daytime and 55 at night; in Manitoba and Alberta it is 60 in daytime and 50 at night, with the exception of a few selected sections of four-lane highway in Alberta and Manitoba where maximum speeds in excess of the foregoing may be authorized and posted. In Nova Scotia the limit is a "reasonable and prudent" speed, with a maximum of 60 miles an hour except where 65 miles an hour is authorized. In Ontario maximum speeds vary from 50 to 60 miles an hour, depending on type of highway. In the other provinces the maximum speed permitted is normally 50 miles an hour; in Saskatchewan and British Columbia where higher speed limits are in effect they are posted. Slower speeds are always required in cities, towns and villages, when passing schools and public playgrounds, at road intersections, railway crossings or at other places or times where the view of the highway for a safe distance ahead is in any way obscured. In almost all provinces, truck speed limits are at least five miles an hour below automobile speed limits. In all provinces and territories, accidents resulting in personal injury or property damage of \$100 or more must be reported to a police officer (in Nova Scotia to the Registrar of Motor Vehicles or to a police officer; in Quebec to the Motor Vehicle Bureau) and a driver involved must not leave the scene of an accident until he has rendered all possible aid and disclosed his name to the injured party.

**Driver Licensing Controls.**—All provinces and territories impose penalties for infractions of driving regulations, ranging from fines for minor infractions to suspension of the operator's driving permit, impounding of the car (except in the Northwest Territories), or imprisonment for more serious infractions. In most provinces penalties have been linked to a driver-improvement program, the aim of which is to correct faulty driving habits, not to take drivers off the road. The most common driver-improvement program includes the demerit-point-system.

**Safety Responsibility Legislation.**—Each province has enacted legislation under this heading (sometimes referred to as financial responsibility legislation). In general, these laws provide for the automatic suspension of the driver's licence and motor vehicle permit of a person convicted of a serious offence (impaired driving, driving under suspension, etc.) or a person involved directly or indirectly in an accident who is not covered for third-party insurance at the time of the accident (except in Saskatchewan where a judgment must be rendered for damages). The suspension remains effective until any penalty or judgment has been satisfied and proof of financial responsibility for the future is filed; in British Columbia proof of financial responsibility for the future is not required if suspension is for accident only. In Quebec, Saskatchewan and the Yukon Territory, uninsured motor vehicles may be impounded following an accident of any consequence, i.e., an accident resulting in personal injury or death, or property damage in excess of \$100 (\$200 in Saskatchewan). In Ontario, the non-resident motorist is not required to carry or produce any form of proof of insurance.

Although safety responsibility legislation has not been enacted in the Northwest Territories, under present requirements the owner of a motor vehicle resident in the Mackenzie Highway region must submit evidence of stipulated insurance coverage on such vehicle before he can obtain registration. In the Yukon Territory, proof of insurance must be supplied before vehicle licence is issued. When the insurance expires or is cancelled, vehicle licence plates must be returned to the Registrar of Motor Vehicles.

**Unsatisfied Judgment Fund.**—Legislation has been enacted in all provinces, except in Saskatchewan and in the Yukon and Northwest Territories, usually in the form of an amendment to the motor vehicle laws of the province or territory, providing for the establishment of a fund, frequently called an Unsatisfied Judgment Fund (in British Columbia, the Traffic Victims' Indemnity Fund), out of which are paid judgments awarded for damages arising out of motor vehicle accidents in the province which cannot be collected in the ordinary process of law. In Newfoundland, Prince Edward Island, Nova Scotia, Quebec and British Columbia the fund is maintained by insurance companies. In all the other provinces, except Saskatchewan where insurance is compulsory, the funds are obtained by the annual collection of a fee from the registered owner of every motor vehicle or from every person to whom a driver's licence is issued. The fee does not exceed \$1 per annum except that Ontario and Alberta collect \$20 from each uninsured owner of a motor vehicle at the time of registration or transfer and Manitoba collects an additional \$25 from each uninsured owner at the time of registration. A feature of this legislation, which is contained in some provincial statutes, is the provision for the payment of judgments in 'hit-and-run' accidents. When these occur, if neither the owner nor the driver can be identified, action may be taken against the Registrar of Motor Vehicles (the Minister of Finance in Newfoundland and the Administrator of the Motor Vehicles Accident Claim Fund in Alberta); any judgment secured against the responsible authority is paid out of the Fund. All of these laws contain a provision limiting the amount that can be paid out of the Fund on one judgment. In Newfoundland and Nova Scotia, the limits are \$10,000 for one person, \$20,000 for two or more persons injured in one accident and \$5,000 for property damage. In Nova Scotia and New Brunswick the limit is \$35,000 in respect of any one accident. In Prince Edward Island and Quebec the limit is \$35,000 for all damages in the same accident, subject to a deduction of \$200 from all damage to the property of others; damages resulting in bodily injury or death are, up to \$30,000, payable by priority over damages to property and the latter are, up to \$5,000, payable by priority over the former out of the amount of any insurance or other guarantee of indemnity. In British Columbia, the limit is based on the single amount of \$50,000 for any one accident



with the proviso that not more than \$5,000 may be paid on a property damage claim until injury claims up to \$45,000 have been satisfied; the \$35,000 limit exists for hit-and-run accidents but does not apply to payments for property damage. In Ontario and Alberta, the limits are \$35,000 for death or personal injury to one or more persons and \$5,000 for damage to property, subject to a limit of \$35,000 in any one accident. In Manitoba, the limit based on one accident is \$35,000, with judgments arising out of bodily injury or death having priority to the extent of \$30,000 over claims resulting from loss of or damages to property; and judgments arising out of loss of or damage to property having priority to the extent of \$5,000 over judgments resulting from bodily injury or death; the maximum amount payable for a single judgment resulting from loss of or damage to property is \$3,000 subject to a deduction of \$200. In other provinces, lower limits of \$5,000, \$10,000 and \$1,000 are retained. For hit-and-run accidents payments are made for personal injuries only.

Sources of information on provincial motor vehicle and traffic regulations:—

#### **Newfoundland**

*Administration.*—The Minister of Finance, St. John's.

*Legislation.*—The Highway Traffic Act, 1962 (amended 1964).

#### **Prince Edward Island**

*Administration.*—The Provincial Secretary, Charlottetown.

*Legislation.*—The Highway Traffic Act (SPEI 1964, c. 14).

#### **Nova Scotia**

*Administration.*—Registry of Motor Vehicles, Department of Highways, Halifax.

*Legislation.*—The Motor Vehicle Act (1954, c. 184, as amended) and the Motor Carrier Act (1958, c. 7, as amended).

#### **New Brunswick**

*Administration.*—Motor Vehicle Branch, Department of Provincial Secretary, Fredericton.

*Legislation.*—The Motor Vehicle Act (RSNB 1955, as amended).

#### **Quebec**

*Administration.*—Motor Vehicle Bureau, Department of Transportation and Communications, Parliament Bldgs., Quebec.

*Legislation.*—The Highway Code (RSQ 1941, c. 142 and 142A, as amended).

#### **Ontario**

*Administration.*—Ontario Department of Transport, Toronto.

*Legislation.*—The Highway Traffic Act (RSO 1960, c. 172, as amended), the Public Vehicles Act (RSO 1960, c. 337, as amended), the Public Commercial Vehicles Act (RSO 1960, c. 319, as amended) and the Motor Vehicle Accident Claims Act (1961-62, c. 84, as amended).

#### **Manitoba**

*Administration.*—Minister of Public Utilities, Winnipeg.

*Legislation.*—The Highway Traffic Act (SM 1966, c. 29) and The Unsatisfied Judgment Fund Act (SM 1965, c. 89).

#### **Saskatchewan**

*Administration.*—Highway Traffic Board, Revenue Building, Regina.

*Legislation.*—The Vehicles Act, 1965.

#### **Alberta**

*Administration and Legislation.*—The Vehicles and Highway Traffic Act (RSA 1955, c. 356) and the Motor Vehicle Accident Claims Act (SA 1964, c. 56) are administered by the Motor Vehicle Branch, Department of Highways, Edmonton. The Public Service Vehicles Act (RSA 1955, c. 265) and the Rules and Regulations are administered by virtue of authority vested in the Highway Traffic Board, Department of Highways, Edmonton.

**British Columbia**

*Administration and Legislation.*—Enforcement of the Motor Vehicle Act, the Commercial Transport Act and the Motor Carrier Act is vested in the Royal Canadian Mounted Police and the various municipal police forces. The Motor Carrier Act is administered by the Public Utilities Commission, the Motor Vehicle Act by the Superintendent of Motor Vehicles and the Commercial Transport Act by the Minister of Commercial Transport, Victoria, B.C.

**Yukon Territory**

*Administration.*—Commissioner of the Yukon Territory, Whitehorse, Y.T. Information regarding regulations may also be obtained from the Registrar of Motor Vehicles, Government of the Yukon Territory, Whitehorse, Y.T.

*Legislation.*—The Motor Vehicles Ordinance (Revised Ordinances 1958, c. 77, as amended).

**Northwest Territories**

*Administration.*—Commissioner of the Northwest Territories. Address communications to the Deputy Commissioner of the Northwest Territories, 400 Laurier Ave. West, Ottawa.

*Legislation.*—The Motor Vehicle Ordinance (Revised Ordinances of the Northwest Territories, 1956, c. 72, as amended).

**Section 2.—Highways, Roads and Streets**

**Highways and Roads.**—The populated sections of Canada are well supplied with highways and roads. Access to outlying settlements is provided to some extent by roads built by logging, pulp and paper, and mining companies, although these are not generally available for public travel. At the same time, great areas of Newfoundland, Quebec, Ontario, the Prairie Provinces, British Columbia and the Territories are very sparsely settled and are virtually without roads of any kind.

At the end of 1965 the mileage of highways and rural roads in Canada was 448,378, an increase of 9,512 miles over the 438,866 reported in 1964. The 448,378 miles include all roads under provincial jurisdiction, federal roads, and local roads under municipal jurisdiction other than the mileages in census metropolitan areas and urban centres of more than 1,000 population. The latter are given separately under the heading of "Urban Streets", p. 807.

**1.—Highway and Rural Road Mileage classified by Type and by Province, 1965 with Totals for 1964**

NOTE.—Excludes urban streets but includes mileages under jurisdiction of rural and small urban municipalities; excludes mileages of all roads on Indian reservations except those of flexible pavement.

Classification	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask. <sup>1</sup>	Alta.	B.C.	Y.T. and N.W.T.	Canada
	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles
<b>Surfaced.....</b>	<b>4,780</b>	<b>2,640</b>	<b>9,396</b>	<b>13,114</b>	<b>45,189</b>	<b>79,559</b>	<b>29,058</b>	<b>55,970</b>	<b>59,530</b>	<b>20,599</b>	<b>2,445</b>	<b>322,280</b>
Rigid pavement	2	334	7	—	13,366	2,061	228	—	23	19	—	16,040
Flexible pavement....	1,007	905	4,016	1,893	1,023	27,151	2,844	5,535	4,966	6,497	4	55,751
Gravel.....	3,771	1,401	5,373	11,311	30,800	50,347	25,986	50,435	54,541	14,083	2,441	250,489
<b>Earth.....</b>	<b>552</b>	<b>668</b>	<b>6,123</b>	<b>—</b>	<b>9,674</b>	<b>3,476</b>	<b>13,959</b>	<b>69,781</b>	<b>14,348</b>	<b>7,426</b>	<b>91</b>	<b>126,098</b>
<b>Totals, 1965..</b>	<b>5,332</b>	<b>3,308</b>	<b>15,519</b>	<b>13,114</b>	<b>54,863</b>	<b>83,035</b>	<b>43,017</b>	<b>125,751</b>	<b>73,878</b>	<b>28,025</b>	<b>2,536</b>	<b>448,378</b>
<b>1964..</b>	<b>5,387</b>	<b>3,329</b>	<b>15,426</b>	<b>13,114</b>	<b>56,424</b>	<b>78,183</b>	<b>38,487</b>	<b>124,961</b>	<b>72,788</b>	<b>28,268</b>	<b>2,499</b>	<b>438,866</b>

<sup>1</sup> Includes road allowances.

Expenditure on highways and rural roads in the year ended Mar. 31, 1965 totalled \$1,100,600,000, an amount 19.5 p.c. higher than that for the previous fiscal year; construction expenditures increased by 23.3 p.c. and maintenance costs by 9.3 p.c.

## 2.—Construction, Maintenance and General Expenditure on Highways, Rural Roads, Bridges and Ferries, by Province, Years Ended Mar. 31, 1964 and 1965

Item and Province or Territory	1964	1965	Item and Province or Territory	1964	1965
	\$'000	\$'000		\$'000	\$'000
<b>Construction</b> .....	<b>611,648</b>	<b>754,439</b>	<b>Administration and General</b> ...	<b>55,502</b>	<b>68,396</b>
Newfoundland.....	24,723	43,462	Newfoundland.....	577	647
Prince Edward Island.....	6,070	6,666	Prince Edward Island.....	84	266
Nova Scotia.....	16,237	19,858	Nova Scotia.....	1,671	1,905
New Brunswick.....	20,574	27,030	New Brunswick.....	1,066	1,536
Quebec.....	165,818	254,052	Quebec.....	6,515	7,214
Ontario.....	181,237	214,238	Ontario.....	35,006	43,352
Manitoba.....	25,237	30,602	Manitoba.....	3,466	3,663
Saskatchewan.....	33,075	38,230	Saskatchewan.....	1,858	3,106
Alberta.....	55,506	53,259	Alberta.....	846	874
British Columbia.....	78,675	62,370	British Columbia.....	3,910	4,711
Yukon and N.W.T.....	4,496	4,672	Yukon and N.W.T.....	303	1,123
<b>Maintenance</b> .....	<b>254,079</b>	<b>277,794</b>	<b>Totals</b> .....	<b>921,229</b>	<b>1,100,629</b>
Newfoundland.....	10,169	11,125	<b>Distribution of Expenditure—</b>		
Prince Edward Island.....	2,880	2,749	<b>Federal</b> .....	<b>82,251</b>	<b>132,138</b>
Nova Scotia.....	14,768	13,816	<b>Provincial</b> .....	<b>744,627</b>	<b>874,143</b>
New Brunswick.....	13,428	13,634	<b>Municipal</b> .....	<b>89,442</b>	<b>90,467</b>
Quebec.....	73,749	76,446	<b>Other</b> .....	<b>4,909</b>	<b>3,881</b>
Ontario.....	69,881	72,814			
Manitoba.....	7,112	8,075			
Saskatchewan.....	12,840	12,718			
Alberta.....	22,215	22,199			
British Columbia.....	25,304	31,267			
Yukon and N.W.T.....	1,733	12,951			

<sup>1</sup> Includes federal administrative costs *re* Trans-Canada Highway amounting to \$200,000 in 1963-64 and \$190,000 in 1964-65.

**Federal-Provincial Road Assistance Programs.**—There are various programs existing between the Federal Government and the provinces relating to highway and road construction, the co-ordination of which is the responsibility of the federal Minister of Transport who reports to Parliament on federal road policy. When major programs of assistance have been decided upon, their implementation is undertaken either by the Department of Public Works or by the sponsoring Department.

*The Trans-Canada Highway.*—The original federal-provincial agreement for construction of the Trans-Canada Highway is given in outline, together with data on specifications and route across the participating provinces, in the 1951 Year Book, pp. 631-634. Construction progress and changes in legislation are reported in subsequent editions.

Under the Act, which became effective Dec. 10, 1949, agreements covering the Federal Government's participation in the cost of construction were entered into with each of the provinces. Construction standards were set and the date of completion fixed. The shortest practicable east-west route was to be designated by each province within its own borders, in agreement on terminal points with adjoining provinces, and those sections within the National Parks were to be the responsibility of the Federal Government. Later amendments to the Act increased the extent of federal financial participation and extended the period in which construction costs might be incurred under the Act to Dec. 31, 1967.

Although construction was still going on in a number of sections, the closing in 1962 of the last major gap—in the Rocky Mountains—made it possible for the first time to drive the entire length of the 4,860-mile route. The Trans-Canada Highway was officially opened on Sept. 3, 1962. Provincial mileages are approximately as follows: Newfoundland, 540; Prince Edward Island, 71; Nova Scotia, 318; New Brunswick, 390; Quebec, 399; Ontario, 1,453; Manitoba, 309; Saskatchewan, 406; Alberta, 282; and British Columbia, 552. Length through the National Parks totals 140 miles.

Up to Mar. 31, 1966, contractual commitments for new construction on the Highway amounted to \$997,960,434, of which the federal share was \$625,000,000. Federal payments



to the provinces for prior, interim and new construction totalled \$573,249,165. Paving to specified standards had been completed over a distance of 4,139 miles and 841 bridges, overpasses and other structures of more than 20-foot span had been or were being constructed.

*Roads to Resources.*—The Roads to Resources Program is a national undertaking designed to provide access to areas potentially rich in natural resources. Negotiations, commenced in 1958, led to agreements being signed with all ten provinces that will eventually result in the construction or reconstruction of more than 4,700 miles of road. Progress of the program to Mar. 31, 1966 was as follows:—

Province	Estimated Total Cost	Value of Approved Contracts	Provincial Expenditure	Federal Contribution	Total Mileage	Mileage Completed
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	No.	No.
Newfoundland.....	16.06	15.56	11.77	4.90	322	270
Prince Edward Is...	15.00	17.07	12.92	6.46	447	389
Nova Scotia.....	16.34	15.14	14.88	7.44	492	406
New Brunswick....	20.56	16.07	13.97	6.00	425	263
Quebec.....	13.79	15.47	13.79	6.94	248	172
Ontario.....	21.66	17.84	15.65	6.66	562	325
Manitoba.....	14.37	15.86	14.76	7.38	693	334
Saskatchewan.....	23.88	16.37	12.96	6.48	811	419
Alberta.....	20.38	15.09	14.83	7.41	416	337
British Columbia..	20.50	15.00	13.72	6.86	321	185
TOTALS.....	182.54	159.47	139.25	66.54	4,738	3,100

As the statement shows, the total estimated cost in most provinces exceeds \$15,000,000, the amount sharable under the agreement, but the federal contribution to each province will remain at \$7,500,000. Private industry shares in the cost of certain roads where construction is of most direct benefit to the company concerned. In any province, the program may consist of as many projects as can qualify for inclusion and for which funds are available. In most provinces, the majority of the roads being built under the program are intended for the purpose of opening up regions to primary resource development and exploration. In Prince Edward Island and Nova Scotia, on the other hand, a number of routes have been chosen for their tourist potential.

*Development Roads.*—The Development Road Program in the Yukon Territory and the Mackenzie District of the Northwest Territories is distinct from the Roads to Resources Program in that the Federal Government is responsible for construction; in the Roads to Resources Program, the contribution of the Federal Government is wholly financial. Maintenance costs of Roads to Resources are borne by the provinces but northern roads costs are shared by the Federal and Territorial Governments on an 85-15 basis. In the Yukon Territory, approximately 1,300 miles of development roads, constructed at a cost of about \$30,000,000, were in use in 1965-66; in the Northwest Territories and Wood Buffalo National Park, about 750 miles costing about \$29,000,000, were in use by the end of March 1966.

In late 1965, a new ten-year road-building program in the Yukon and Northwest Territories was announced, calling for an average expenditure of \$10,000,000 a year, an amount double the annual roads investment in the previous ten-year period. This is the first phase of a 20-year roads network program which should bring all potential areas of resource development in the Territories within 200 miles of the nearest permanent road and thus gradually reduce the North's dependence on seasonal transportation for bulk shipments, reduce the cost of holding large inventories and, as the program progresses, bring the cost of living more in line with that in other parts of Canada. In addition, improved access should result in substantial growth of the tourist industry.

An immediate result of the new program is the speed-up of construction now under way on the 165-mile highway from just south of Hay River to Fort Smith. Also forming part of the new program is the 127-mile area development road being constructed from

Ross River to Carmacks in Yukon Territory. This road is of special interest to tourists since it will provide a route from Watson Lake on the Alaska Highway to and through Carmacks and Dawson, and onward to the Alaska border where it will connect with the State of Alaska Highway System.

Under the previous program, the Federal Government offered to build and pay for mine development roads where two or more companies were developing a mineralized region, and to assist with the cost of mine-access roads and tote-trails. Even so, about 10 p.c. of present exploration and development spending by private industry, which is in excess of \$25,000,000 a year, is spent merely on gaining access to properties. The more extensive road network visualized by the new program, combined with increased federal aid for certain types of access roads, will make it possible for private industry to delegate more capital to actual exploration work.

Types of roads and proportion of federal assistance under the new program are as follows:—

*Permanent Access Roads*—to lead from the nearest permanent road to a resource development about to produce; federal assistance may be up to two thirds of the cost but may not exceed 15 p.c. of the capital invested by a company before commercial production or exploitation.

*Communication and Network Roads*—to provide connecting links between the territories, the provinces, and population centres within the territories; construction and 85 p.c. of maintenance costs will be paid by the Federal Government.

*Area Development Roads*—to lead into resource-potential areas; construction costs will be paid by the Federal Government and maintenance shared by the Federal and Territorial Governments.

*Initial Access Roads (tote-trails)*—low-standard winter or year-round roads to provide an established resource project with access to a network road; federal assistance may be up to 50 p.c. of the cost of the road, which will be maintained by its primary user.

*Roads to Public Airports (land or water)*—to connect airports with the nearest network or local road; construction and 85 p.c. of maintenance will be paid by the Federal Government.

*Construction and Improvement of Trunk Highways in the Atlantic Provinces.*—This program, announced in February 1965, involves an expenditure by the Federal Government of \$30,000,000 over a three-year period to be financed from special appropriations to the Atlantic Development Board. The additional appropriations enable the Board to continue and expand a program of highway assistance begun in 1964 when \$10,000,000 was allocated from the Atlantic Development Fund to meet pressing trunk highway needs in the Atlantic region. Expenditures approved and funds disbursed by the Atlantic Development Board under this program up to Mar. 31, 1966 are included in the statement of approvals and expenditures by the Board for all purposes in Chapter XXIV, Sect. 7.

*Urban Streets.*—Information on urban streets is obtained from the local administrations of all areas with populations over 1,000, all areas located within census metropolitan areas, improvement districts over 1,000 population and rural municipalities over 15,000 population. Brief statistical data are given in Table 3; more detail may be obtained from DBS annual report *Road and Street Mileage and Expenditure* (Catalogue No. 53-201).

3.—Statistics of Urban Streets, 1964 and 1965

Item		1964	1965
<b>Total Expenditure Reported<sup>1</sup></b> .....	<b>\$'000</b>	<b>283,015</b>	<b>329,308</b>
New construction.....	"	144,343	165,738
Reconstruction, repair, cleaning, sanding, snow removal, administration, etc..	"	138,672	163,570
<b>Total Urban Mileage</b> .....	<b>No.</b>	<b>42,177</b>	<b>44,312</b>
Rigid pavement.....	"	6,884	7,073
Flexible pavement.....	"	19,177	20,832
Gravel and other surfaces.....	"	14,133	14,370
Earth.....	"	1,983	2,037

<sup>1</sup> Includes expenditures on sidewalks, footpaths, bridges and ferries.

## Section 3.—Motor Vehicles

**Motor Vehicle Registrations.**—Registrations continue to increase year by year, a record of 6,698,778 being reached in 1965. Of that total, 5,279,373 were passenger cars—one for every 3.7 persons. Registrations by province are given in Table 4 and types of vehicles registered by province in Table 5.

## 4.—Motor Vehicles Registered, by Province, 1956-65

NOTE.—Registrations given here include passenger cars, trucks, buses, motorcycles, service cars, etc., but not trailers or dealer licences. Figures for 1904-55 are given in the corresponding table of previous Year Books beginning with the 1937 edition.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total <sup>1</sup>
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1956.....	45,997	23,373	157,544	111,315	844,827	1,710,240	240,008	291,265	381,153	454,217	4,265,437
1957.....	47,982	23,725	164,286	116,712	901,065	1,793,499	246,188	300,326	405,229	491,884	4,497,091
1958.....	51,575	25,604	164,954	121,715	968,058	1,868,922	256,064	314,423	430,081	515,244	4,723,825
1959.....	51,145	27,502	189,435	129,629	1,010,366	1,973,737	269,974	326,690	456,458	545,491	5,017,686
1960.....	61,952	30,147	187,065	138,469	1,096,053	2,032,484	285,689	335,148	486,370	564,351	5,256,341
1961.....	65,270	32,166	206,691	145,951	1,183,978	2,126,270	299,998	349,817	509,298	588,280	5,517,023
1962.....	74,119	33,888	203,370	151,360	1,281,180	2,177,148	312,272	372,219	535,459	620,426	5,774,810
1963.....	79,422	35,314	212,034	156,768	1,381,801	2,268,320	324,806	382,190	560,490	662,453	6,074,655
1964.....	87,990	35,032	222,827	165,311	1,441,201	2,381,219	339,509	396,742	583,713	716,644	6,382,033
1965.....	92,885	33,849	233,653	174,428	1,480,743	2,516,680	342,335	418,605	606,754	786,310	6,698,778

<sup>1</sup> Includes registrations in the Yukon and Northwest Territories; in 1965, they numbered 7,132 and 5,403, respectively.

## 5.—Types of Motor Vehicles Registered, by Province, 1964 and 1965

Year and Province or Territory	Passenger Cars <sup>1</sup>	Commercial Cars, Trucks, etc. <sup>2</sup>	Buses	Motorcycles	Total
	No.	No.	No.	No.	No.
<b>1964</b>					
Newfoundland.....	65,384	22,001	365	240	87,990
Prince Edward Island.....	24,323	10,586	11	142	35,062
Nova Scotia.....	169,490	51,294	1,147	896	222,827
New Brunswick.....	130,463	33,227	732	889	165,311
Quebec.....	1,115,023	301,824	9,763	14,591	1,441,201
Ontario.....	2,028,528	334,759	7,598	10,334	2,381,219
Manitoba.....	258,076	79,206	198	2,029	339,509
Saskatchewan.....	259,919	135,532	249	1,042	396,742
Alberta.....	408,382	163,447	4,060	7,824	583,713
British Columbia.....	571,807	135,825	<sup>3</sup>	9,012	716,644
Yukon and Northwest Territories.....	6,466	5,149	66	134	11,815
<b>Canada, 1964.....</b>	<b>5,037,861</b>	<b>1,272,850</b>	<b>24,189</b>	<b>47,133</b>	<b>6,382,033</b>
<b>1965</b>					
Newfoundland.....	69,900	22,155	380	450	92,885
Prince Edward Island.....	25,796	7,843	10	200	33,849
Nova Scotia.....	178,389	51,896	1,219	2,149	233,653
New Brunswick.....	137,137	34,475	752	2,064	174,428
Quebec.....	1,145,785	307,630	10,742	16,586	1,480,743
Ontario.....	2,139,696	344,519	8,395	24,070	2,516,680
Manitoba.....	260,339	78,524	196	3,276	342,335
Saskatchewan.....	287,771	148,026	269	2,540	418,606
Alberta.....	424,217	169,379	4,188	8,970	606,754
British Columbia.....	623,742	149,192	<sup>3</sup>	13,376	786,310
Yukon and Northwest Territories.....	6,601	5,559	89	286	12,535
<b>Canada, 1965.....</b>	<b>5,279,373</b>	<b>1,319,198</b>	<b>26,240</b>	<b>73,967</b>	<b>6,698,778</b>

<sup>1</sup> Includes taxis.

<sup>2</sup> Includes service cars, road tractors, etc.

<sup>3</sup> Included with trucks.



**Apparent Supply of Automobiles.**—The apparent supply of automobiles in Canada in any year is computed by deducting the number exported from the sum of the production and imports. Statistics regarding retail sales and the financing of motor vehicle sales are given in Chapter XXI on Domestic Trade and Prices.

### 6.—Apparent Supply of New Automobiles, 1955-64

Year	Cars Made for Sale in Canada		Car Imports		Re-exports of Imported Cars		Apparent Supply	
	Pas-senger	Com-mercial <sup>1</sup>	Pas-senger	Com-mercial	Pas-senger	Com-mercial	Pas-senger	Com-mercial <sup>1</sup>
	No.	No.	No.	No.	No.	No.	No.	No.
1955.....	349,306	69,186	48,546	9,403	22	24	397,830	78,565
1956.....	349,809	85,094	76,200	13,032	45	42	425,964	98,084
1957.....	318,416	64,857	70,796	9,215	65	39	389,147	74,033
1958.....	280,677	55,908	104,195	9,182	190	8	384,682	65,082
1959.....	285,841	63,429	153,932	11,632	549	6	439,224	75,055
1960.....	307,499	66,293	170,653	9,376	179	56	477,973	75,613
1961.....	312,599	60,332	106,865	9,487	700	35	418,764	69,784
1962.....	412,120	78,094	94,655	4,413	194	67	506,581	82,440
1963.....	513,785	93,912	59,634	3,193	391	38	573,028	97,067
1964.....	520,743	104,446	92,490	3,160	1,277	17	611,956	107,589

<sup>1</sup> Includes Armed Forces vehicles.

**Provincial Government Revenue from Motor Vehicles.**—The taxation of motive fuels, motor vehicles, garages, drivers, chauffeurs, etc., is an important source of provincial government revenue. In every province licences or permits duly issued by the provincial authorities are required for motor vehicles of all kinds, trailers, operators or drivers, paid chauffeurs, dealers, garages and gasoline and service stations. In 1965 the average cost per motor vehicle for operating taxes and licences was about \$137.

The more important sources from which provincial revenue from motor vehicles is derived are shown in Table 7. Motive fuel tax rates are given in the Public Finance Chapter, Section 2, Subsection 2 on Provincial Taxes; Federal Government revenue from excise and sales taxes is given in the same Chapter, Section 3, Subsection 3 on Revenue from Taxation.

### 7.—Provincial Revenue from the Registration and Operation of Motor Vehicles, by Province, Years Ended Mar. 31, 1965 and 1966

Year and Province or Territory	Passenger Automobile Licences	Truck, Bus, Trailer and Other Vehicle Licences	Motorcycle Licences	Chauffeur, Driver and Dealer Licences	Public Service Vehicle Tax	Motive Fuel Taxes	Total <sup>1</sup>
	\$	\$	\$	\$	\$	\$	\$
<b>1964-65</b>							
Newfoundland.....	1,127,293	1,563,719	3,231	406,761	494	9,399,789	12,906,354
Prince Edward Island..	454,304	367,514	517	92,408	700	3,309,324	4,242,806
Nova Scotia.....	3,355,386	2,996,780	2	471,915	113,392	21,992,203 <sup>r</sup>	29,402,459 <sup>r</sup>
New Brunswick.....	3,038,288	2,474,865	4,291	399,996	—	18,190,997	24,481,572
Quebec.....	25,360,850	23,193,257	58,364	4,282,508	1,604,055	166,038,702	222,596,386
Ontario.....	40,395,378	38,550,328	112,454	2,454,962 <sup>3</sup>	4,087,640	233,188,417	323,091,027
Manitoba.....	4,225,089	3,725,065	8,611	163,150 <sup>4</sup>	1,284,234	31,697,040	41,777,934
Saskatchewan.....	3,899,966	4,547,871	5	526,499	—	31,620,222	41,732,528
Alberta.....	6,075,867	8,485,123	6	440,310	229,087	39,970,255	56,569,358
British Columbia.....	11,260,795	9,835,515	39,059	952,887	350,959	50,508,823	73,913,914
Yukon and N.W.T.....	76,383	100,693	413	28,016	95,840	722,363	1,075,970
<b>Canada, 1964-65...</b>	<b>99,269,599</b>	<b>95,840,730</b>	<b>226,940<sup>7</sup></b>	<b>10,219,412</b>	<b>7,766,401<sup>7</sup></b>	<b>606,638,135<sup>7</sup></b>	<b>831,790,308<sup>r</sup></b>

For footnotes, see end of table, p. 810.

### 7.—Provincial Revenue from the Registration and Operation of Motors Vehicles, by Province, Years Ended Mar. 31, 1965 and 1966—concluded

Year and Province or Territory	Passenger Automobile Licences	Truck, Bus, Trailer and Other Vehicle Licences	Motorcycle Licences	Chauffeur, Driver and Dealer Licences	Public Service Vehicle Tax	Motive Fuel Taxes	Total <sup>1</sup>
1965-66	\$	\$	\$	\$	\$	\$	\$
Newfoundland.....	1,209,403	1,682,567	3,457	439,360	456	11,974,477	15,809,209
Prince Edward Island..	480,291	382,635	710	97,381	600	3,546,470	4,529,694
Nova Scotia.....	3,657,772	3,214,672	2	491,526	124,205	24,778,878	32,822,643
New Brunswick.....	3,190,441	2,718,377	9,687	412,508	—	20,130,088	26,911,058
Quebec.....	28,055,770	25,352,496	66,344	4,953,666	1,731,158	190,982,103	251,388,190
Ontario.....	43,611,434	39,486,262	323,757	4,899,695 <sup>2</sup>	4,124,416	251,501,969	348,854,193
Manitoba.....	5,337,079	4,311,331	16,596	2,172,360 <sup>3</sup>	1,355,938	39,429,932	53,447,299
Saskatchewan.....	3,919,780	4,836,220	5	544,714	—	30,014,895	40,521,226
Alberta.....	6,330,369	8,966,331	6	454,959	212,713	43,113,875	60,652,606
British Columbia.....	12,155,293	10,716,927	63,196	1,517,923	358,786	55,756,091	81,676,348
Yukon and N.W.T.....	74,169	92,460	964	29,522	92,957	743,366	1,091,283
<b>Canada, 1965-66...</b>	<b>106,021,801</b>	<b>101,760,278</b>	<b>484,711<sup>7</sup></b>	<b>16,013,614</b>	<b>8,001,229<sup>7</sup></b>	<b>671,972,144</b>	<b>917,703,749</b>

<sup>1</sup> Includes other items not shown such as transfer of motor vehicles, garage and service station licences, and fines for infractions of motor vehicle laws. <sup>2</sup> Included with other motor vehicles. <sup>3</sup> Licences issued on three-year basis. <sup>4</sup> Licences issued on two-year basis. <sup>5</sup> Included with miscellaneous revenues and therefore in total. <sup>6</sup> Included with passenger automobiles. <sup>7</sup> Not complete.

**Sales of Motive Fuels.**—In order to estimate the total amount of motive fuel purchased in Canada for use in motor vehicles on public streets and highways, it has been necessary to eliminate from the total the amount of motive fuel used for other purposes. Thus, from the total or gross sales, including imports and exports, the following are subtracted to obtain net sales: tax exempt sales to the Federal Government and other consumers, exports, and sales on which refunds were paid. Net sales are thus defined as sales on which a tax or taxes have been paid in full and are considered to approximate the actual amount of motive fuel purchased in Canada for use on public streets and highways. As shown in Table 8, consumption of taxable gasoline, which is used almost entirely for automotive purposes, rose 7.8 p.c. in 1965 and net sales of diesel oil 23.4 p.c.

### 8.—Sales of Motive Fuels, by Province, 1961-65

Province or Territory	1961	1962	1963	1964	1965
<b>GASOLINE AND LIQUEFIED PETROLEUM GASES</b>					
	gal.	gal.	gal.	gal.	gal.
Newfoundland.....	38,929,496	42,326,939	46,158,513	51,205,828	59,214,001
Prince Edward Island.....	18,098,741	18,964,066	19,687,378	20,753,975	21,625,345
Nova Scotia.....	111,462,514	117,994,058	122,355,774	129,977,561	136,170,762
New Brunswick.....	85,569,846	89,144,726	92,485,963	99,370,660	107,558,514
Quebec.....	788,429,327	843,642,435	899,756,445	938,822,568	1,060,362,285
Ontario.....	1,446,057,743	1,511,424,379	1,477,127,028	1,594,284,345	1,673,758,797
Manitoba.....	202,098,314	213,294,660	222,604,138	225,783,740	232,410,160
Saskatchewan.....	272,422,024	295,985,892	314,940,380	318,863,410	351,479,362
Alberta.....	522,792,671	565,553,393	422,082,129 <sup>1</sup>	439,543,671	457,092,775
British Columbia.....	352,133,881	361,164,628	380,461,856	422,975,317	441,806,409
Yukon and N.W.T.....	6,282,885	6,870,923	7,764,476	8,478,347	8,739,575
<b>Totals, Gross Sales.....</b>	<b>3,844,277,442</b>	<b>4,066,366,099</b>	<b>4,005,424,080</b>	<b>4,250,059,422</b>	<b>4,550,217,985</b>
Refunds and exemptions.....	735,096,297	809,440,450	565,077,175	548,683,750	560,903,911
<b>Totals, Net Sales.....</b>	<b>3,109,181,145</b>	<b>3,256,925,649</b>	<b>3,440,346,905</b>	<b>3,701,375,672</b>	<b>3,989,314,074</b>

<sup>1</sup> The marked decrease in this figure is attributable to the elimination of 125,000,000 gal. of liquefied petroleum gases used for domestic and industrial heating and power. Net sales are not affected by this change.

## 8.—Sales of Motive Fuels, by Province, 1961-65—concluded

Item	1961	1962	1963	1964	1965
	DIESEL OIL				
	gal.	gal.	gal.	gal.	gal.
Totals, Net Sales.....	143,042,427	153,570,626	193,180,457	210,642,160	259,943,441

**Motor Carriers—Freight.\***—Statistics of the common carrier segment of the intercity and rural motor carrier industry have been collected on a continuing basis since 1941. However, as little capital is required to enter the trucking business, many marginal operators are associated with the industry and the large turnover and numerous changes each year have created many problems in the collection of statistics, although these are gradually being overcome. Statistics of contract carriers are available from 1958.

\* Statistics are given in more detail in DBS annual report *Motor Carriers—Freight*, Part I (Catalogue No. 53-222) and Part II (Catalogue No. 53-223).

## 9.—Summary Statistics of Motor Carriers—Freight, 1963 and 1964

Item	Common		Contract	
	1963	1964	1963	1964
<b>Carriers Reporting..... No.</b>	<b>3,298</b>	<b>2,884</b>	<b>1,556</b>	<b>1,496</b>
<b>Property Account—Fixed Assets (motor carrier business)..... \$</b>	<b>324,704,056</b>	<b>322,064,565</b>	<b>70,539,329</b>	<b>82,727,064</b>
<b>Operating Revenues..... \$</b>	<b>442,003,007</b>	<b>463,025,745</b>	<b>82,439,395</b>	<b>94,313,328</b>
Freight—				
Intercity and rural..... \$	428,758,048	445,308,953	77,841,222	90,545,134
Local..... \$	5,145,878	6,795,166	1,965,331	1,711,438
Other..... \$	8,099,081	10,921,626	2,632,842	2,056,756
<b>Operating Expenses..... \$</b>	<b>415,335,544</b>	<b>435,814,377</b>	<b>74,945,837</b>	<b>86,305,832</b>
Maintenance..... \$	56,132,200	57,672,243	12,615,178	15,035,482
Wages of drivers and helpers..... \$	86,734,895	91,075,676	17,028,164	20,059,501
Other (fuel, insurance, fuel taxes, rents and depreciation)..... \$	165,604,118	171,154,626	31,916,593	35,345,456
Licence expense..... \$	14,016,062	14,313,539	2,690,303	3,136,874
Administration and general..... \$	92,848,269	101,598,293	10,695,599	12,728,519
<b>Net Operating Revenues..... \$</b>	<b>26,667,463</b>	<b>27,211,368</b>	<b>7,493,558</b>	<b>8,007,496</b>
<b>Fuel Consumed—</b>				
Gasoline..... '000 gal.	90,816	90,403	23,286	25,116
Diesel oil..... " "	37,230	42,008	6,835	9,049
Liquefied petroleum gases..... " "	157	—	85	27
<b>Employees—</b>				
Average employed during year..... No.	32,558	32,337	5,246	5,741
Total salaries and wages..... \$	152,846,145	160,590,674	23,601,592	27,939,965
Working proprietors..... No.	2,412	2,243	1,146	1,107
Withdrawals of working proprietors..... \$	7,005,679	7,053,208	4,354,256	4,311,477
<b>Equipment—</b>				
Trucks with gasoline engines..... No.	11,406	12,035	3,592	3,427
Trucks with diesel engines..... " "	171	190	196	207
Road tractors with gasoline engines..... " "	7,779	7,594	1,540	1,578
Road tractors with diesel engines..... " "	3,591	3,841	649	832
Semi-trailers..... " "	17,252	18,912	2,498	2,900
Trailers..... " "	1,809	1,244	435	577



**Household Goods Movers and Storage Operators.\***—Statistics of household goods movers and storage operators, summarized in Table 10, were first presented separately in 1960; before that date, they were included either with motor carriers—freight or with warehousing, depending upon the predominant source of operating revenues of the companies concerned.

**10.—Summary Statistics of Household Goods Movers and Storage Operators, 1960-64**

Item	1960	1961	1962	1963	1964
<b>Companies Reporting..... No.</b>	<b>163</b>	<b>192</b>	<b>193</b>	<b>227</b>	<b>228</b>
<b>Investment in Land, Warehouses, Vehicles, etc..... \$</b>	<b>18,016,538</b>	<b>24,506,043</b>	<b>28,861,344</b>	<b>36,529,922</b>	<b>33,828,214</b>
<b>Revenues..... \$</b>	<b>30,967,777</b>	<b>34,315,516</b>	<b>38,482,035</b>	<b>45,860,927</b>	<b>45,565,248</b>
Cartage..... \$	21,882,082	24,329,327	25,980,439	31,052,341	30,532,243
Storage..... \$	4,374,983	4,758,767	5,816,373	6,552,230	5,558,646
Packing..... \$	3,116,592	3,605,636	3,546,449	4,101,846	4,615,712
Other..... \$	1,589,120	1,621,786	3,138,774	4,154,510	4,858,647
<b>Operating Expenses..... \$</b>	<b>30,324,049</b>	<b>33,547,487</b>	<b>36,526,348</b>	<b>44,051,416</b>	<b>43,395,634</b>
Maintenance..... \$	2,226,563	2,426,787	2,835,251	3,224,772	3,206,190
Salaries and wages (charged to operations) \$	9,925,366	10,692,026	10,917,519	13,209,333	13,935,847
Cartage expenses..... \$	1,884,625	2,269,976	2,607,760	3,790,376	3,332,249
Storage expenses..... \$	2,384,414	2,505,279	2,378,406	2,602,250	2,641,829
Other operating expenses..... \$	13,903,081	15,652,419	17,787,412	21,224,685	20,279,519
<b>Net Operating Revenues..... \$</b>	<b>638,728</b>	<b>768,029</b>	<b>1,955,687</b>	<b>1,809,511</b>	<b>2,169,614</b>
<b>Employees—</b>					
Average employed during year..... No.	3,658	3,906	4,064	4,790	4,450
Salaries and wages..... \$	13,701,905	14,937,657	16,220,976	19,758,876	19,355,843
<b>Storage Capacity—</b>					
Household goods..... cu. ft.	27,372,708	30,235,601	31,217,234	36,303,850	33,888,412
Other..... "	1,793,310	4,049,382	5,345,366	9,725,781	7,650,548
<b>Vehicles—</b>					
Trucks..... No.	1,302	1,437	1,578	1,874	1,718
Tractors..... "	650	672	741	824	797
Semi-trailers..... "	647	711	780	803	867
Trailers..... "	40	39	59	169	26

**Passenger Buses.†**—The operations of companies predominantly engaged in passenger bus service are summarized in Table 11. Data refer to the for-hire segment of the industry and only those firms engaged in intercity and rural operations and having an annual gross revenue of \$6,000 or over are covered. Operators predominantly involved in the provision of school bus service are not included nor are airport servicing and urban transit bus operators.

\* Statistics are given in more detail in DBS annual report *Moving and Storage, Household Goods* (Catalogue No. 53-221).

† Statistics are given in more detail in DBS annual report *Passenger Bus Statistics* (Catalogue No. 53-215).

## 11.—Summary Statistics of Intercity and Rural Passenger Bus Companies, 1961-65

NOTE.—Only carriers with an annual gross revenue of \$6,000 or over are included.

Item	1961	1962	1963	1964	1965
<b>Carriers Reporting..... No.</b>	<b>161</b>	<b>159</b>	<b>166</b>	<b>165</b>	<b>162</b>
<b>Property Account—Fixed Assets..... \$</b>	<b>66,489,620</b>	<b>70,436,779</b>	<b>76,252,205</b>	<b>75,007,987</b>	<b>73,864,251</b>
<b>Revenues..... \$</b>	<b>53,122,514</b>	<b>57,057,805</b>	<b>61,236,860</b>	<b>63,170,601</b>	<b>68,841,256</b>
Regular Passenger Service—					
Intercity and rural..... \$	42,969,210	45,051,213	47,960,347	47,945,483	52,304,349
Urban and suburban..... \$	743,846	686,019	879,221	752,507	891,364
Chartered service..... \$	4,722,831	6,125,050	6,597,127	7,498,220	8,068,519
Other transportation revenue..... \$	4,686,627	5,195,523	5,800,165	6,974,391	7,577,024
<b>Operating Expenses..... \$</b>	<b>49,060,235</b>	<b>51,845,161</b>	<b>55,725,517</b>	<b>57,782,444</b>	<b>61,737,884</b>
Maintenance..... \$	9,208,151	10,927,855	11,212,351	11,270,490	11,573,622
Wages and bonuses of drivers and helpers..... \$	12,321,120	13,338,754	14,624,686	14,875,560	16,343,963
Other transportation expenses..... \$	10,318,002	10,677,733	11,675,266	11,612,062	12,851,723
Operating taxes and licences..... \$	4,322,054	4,237,632	4,496,626	4,658,792	4,573,880
Other operating expenses..... \$	12,890,908	12,613,187	13,716,588	15,465,531	16,394,696
<b>Net Operating Revenues..... \$</b>	<b>4,062,279</b>	<b>5,212,644</b>	<b>5,511,343</b>	<b>5,388,157</b>	<b>7,103,372</b>
<b>Traffic and Employees—</b>					
Passengers—					
Regular Routes—					
Intercity and rural..... No.	54,052,706	50,591,146	48,638,373	46,646,418	45,606,246
Urban and suburban..... "	5,401,687	4,756,342	5,019,002	4,871,884	4,570,831
Special and chartered service..... "	4,834,020	5,347,173	6,382,415	6,121,076	6,504,753
Bus Miles—					
Regular Routes—					
Intercity and rural..... No.	88,424,751	90,753,096	93,443,880	94,124,250	90,704,870
Urban and suburban..... "	1,642,072	1,664,367	1,881,933	1,712,294	2,062,317
Special and chartered service..... "	8,128,367	10,049,231	11,385,363	12,009,902	12,203,870
Gasoline consumed..... gal.	5,090,177	4,501,251	4,134,529	3,703,651	3,677,222
Diesel oil consumed..... "	9,118,152	9,908,848	10,328,872	9,812,916	11,040,793
Employees—					
Average employed during year..... No.	5,049	4,662	4,724	4,650	4,738
Total salaries and wages..... \$	22,891,346	22,197,171	23,736,153	23,984,134	25,854,643
Working proprietors..... No.	57	58	69	43	53
Withdrawals of working proprietors..... \$	173,681	150,308	140,663	117,859	152,718
<b>Equipment—</b>					
Buses..... No.	2,340	2,393	2,457	2,513	2,622
Gasoline..... "	1,496	1,191	1,144	1,089	1,086
Diesel..... "	845	1,808	1,513	1,424	1,536

**Motor Transport Traffic.\***—Motor transport traffic in all provinces has been surveyed on a continuing basis since 1957. Quarterly sample selections resulted in about 7 p.c. of total registrations being sampled in 1964 compared with 10 p.c. in 1963, the decrease reflecting a 40-p.c. reduction effected in the sample selection; each quarterly sample was spread over three survey weeks with one third of the sample being used for a seven-day period (Sunday through Saturday) per month. Another change instituted in 1964 was the elimination of the urban operations of all trucks, except for miles travelled and amount of fuel used. Table 12 therefore contains for 1963 only the items that are comparable with those for 1964 which are based on the new concept.

Excluding vehicles that do not perform normal transportation services such as cranes, tow trucks, road-building equipment, etc., and government vehicles, the estimated number of trucks licensed in Canada in 1964 was 1,033,000. Almost 30 p.c. were registered in Ontario and nearly one half were registered in the two Provinces of Ontario and Quebec.

Although for-hire trucks made up only 6 p.c. of the total registrations, they accounted for 73.8 p.c. of the net ton-miles performed by all commercial highway trucks because of the greater distances travelled by this type of vehicle and the heavier loads carried; their average yearly mileage was 25,800 compared with 7,100 for all trucks and their average

\* Statistics are given in more detail in DBS annual reports *Motor Transport Traffic* for Canada and the provinces (Catalogue Nos. 53-207—53-214).

load was 12.9 tons compared with 8.1 tons for all trucks. The predominance of heavier vehicles in the for-hire group also explains why their mileage per gallon of gasoline was only 5.6 compared with an average of 8.8 for all vehicles.

Private intercity vehicles accounted for 21.2 p.c. of the total registrations and for 24.1 p.c. of the total net ton-miles performed; their average yearly mileage was 10,400, average load 4.7 tons, and mileage per gallon of gasoline 9.7. Private urban vehicles made up 39.7 p.c. of the total truck population. Almost three quarters of these vehicles were registered in the three Provinces of Ontario, Quebec and British Columbia.

Farm trucks accounted for 33.1 p.c. of the commercial vehicle registrations but, of course, for only a small portion of the total net ton-miles performed. More than three quarters of all trucks registered in Saskatchewan and half of those registered in Manitoba and Alberta were used in farm operations; approximately 70 p.c. of all farm trucks in Canada were registered in the Provinces of Ontario, Saskatchewan and Alberta.

## 12.—Estimated Truck Population and Truck Traffic, by Type of Operation, 1963 and 1964

Year and Item		For-Hire	Private			Total
			Intercity	Urban	Farm	
1963						
Truck Population (estimated)—		No.				
Atlantic Provinces.....		1,767	30,179	34,511	12,543	79,000
Quebec.....		17,800	38,566	107,034	38,200	201,600
Ontario.....		20,600	67,084	138,989	71,927	298,600
Manitoba.....		1,600	3,500	29,600	35,700	70,400
Saskatchewan.....		1,700	8,657	15,843	86,400	112,600
Alberta.....		10,200	23,248	24,252	77,500	135,200
British Columbia.....		6,900	31,477	52,863	12,460	103,700
Totals, Truck Population.....		No. 60,567	202,711	403,092	334,730	1,001,100
Miles Travelled—						
Atlantic Provinces.....		'000,000 31.8	281.4	160.1	44.9	518.2
Quebec.....		" 361.0	532.9	752.2	112.7	1,758.8
Ontario.....		" 511.5	708.6	760.5	236.0	2,216.6
Manitoba.....		" 96.9	48.9	210.7	84.3	440.8
Saskatchewan.....		" 74.4	97.3	74.7	233.9	480.3
Alberta.....		" 267.9	258.5	140.4	282.1	948.9
British Columbia.....		" 165.4	268.5	251.0	44.1	729.0
Totals, Miles Travelled.....		'000,000 1,508.9	2,196.1	2,349.6	1,038.0	7,092.6
Miles per gallon of gasoline.....		No. 6.0	9.7	10.7	12.7	9.5
1964						
Truck Population (estimated)—		No.				
Atlantic Provinces.....		2,360	31,190	38,035	13,615	85,200
Quebec.....		18,000	39,278	110,422	39,800	207,500
Ontario.....		20,400	76,879	134,803	62,418	294,500
Manitoba.....		1,500	3,500	33,400	39,500	77,900
Saskatchewan.....		1,600	9,659	14,441	90,300	116,000
Alberta.....		10,100	24,450	26,650	82,400	143,600
British Columbia.....		7,800	34,401	52,614	13,485	108,300
Totals, Truck Population.....		No. 61,760	219,357	410,365	341,518	1,033,000
Miles Travelled—						
Atlantic Provinces.....		'000,000 38.9	276.6	180.3	41.9	537.7
Quebec.....		" 379.0	492.9	829.5	115.2	1,816.6
Ontario.....		" 529.9	837.7	803.9	194.4	2,365.9
Manitoba.....		" 81.5	48.9	214.6	78.6	423.6
Saskatchewan.....		" 62.7	113.7	74.7	182.9	434.0
Alberta.....		" 297.8	238.2	147.6	245.8	929.4
British Columbia.....		" 201.5	272.9	252.2	61.7	788.3
Totals, Miles Travelled.....		'000,000 1,591.3	2,280.9	2,502.8	920.5	7,295.5
Miles per gallon of gasoline.....		No. 5.6	9.7	9.5	10.6	8.8
Average weight of goods carried.....		ton 12.9	4.7	..	1.3	8.1
Average net ton-miles per truck.....		No. 205,100	18,800	..	1,000	27,600
Capacity utilized.....		p.c. 53.4	39.6	..	21.9	50.8
Average gross ton-miles per truck.....		No. 442,500	55,500	..	6,900	67,200



**Urban Transit Systems.**—The collection of statistical information on urban transit systems has been extensively reorganized in recent years because of major changes made in the types of vehicles used for mass passenger movement in urban centres. The current series, which was started in 1956, includes operations of motor buses, trolley coaches, streetcars and subway cars carrying passengers in urban and suburban service.

### 13.—Summary Statistics of Urban Transit Systems, 1961-65

Item		1961	1962	1963	1964	1965
<b>Passenger Fares<sup>1</sup></b> .....	No.	<b>987,319,165</b>	<b>995,169,878</b>	<b>988,147,638</b>	<b>994,239,184</b>	<b>985,164,840</b>
Motor bus.....	"	631,202,683	643,307,389	665,481,904	690,881,295	678,017,653
Trolley coach.....	"	175,491,968	172,487,505	149,996,752	133,197,665	130,414,263
Streetcar.....	"	138,585,305	136,550,346	125,937,437	122,023,961	124,787,132
Subway car.....	"	32,993,117	32,874,696	36,491,918	38,055,729	41,373,620
Chartered.....	"	9,046,092	9,949,942	9,168,667	9,662,154	10,332,687
Intercity and rural services (all types of vehicles).....	"	2	2	1,070,970	418,380	239,485
<b>Vehicle-Miles Run</b> .....	No.	<b>198,537,833</b>	<b>202,445,806</b>	<b>208,121,107</b>	<b>212,804,909</b>	<b>213,779,503</b>
Motor bus.....	"	134,363,690	138,252,679	142,779,355	150,113,461	152,806,059
Trolley coach.....	"	32,899,859	32,862,744	32,390,625	28,748,408	27,654,912
Streetcar.....	"	21,441,041	21,240,370	20,302,402	20,118,497	19,912,282
Subway car.....	"	7,018,476	6,951,856	8,967,566	9,474,168	9,644,797
Chartered.....	"	2,814,767	3,138,157	2,935,243	3,628,719	3,495,176
Intercity and rural services (all types of vehicles).....	"	2	2	745,916	721,656	266,277
<b>Fuel Consumed—</b>						
Diesel oil.....	gal.	17,266,159	18,385,972	19,820,960	20,713,770	23,149,602
Gasoline.....	"	9,108,194	9,096,746	9,388,808	8,874,984	7,565,509
Liquid petroleum gases.....	"	334,170	188,000	313,302	277,333	256,069
<b>Passenger Vehicles in Service</b> .....	No.	<b>7,228</b>	<b>7,386</b>	<b>7,509</b>	<b>7,641</b>	<b>7,939</b>
Motor bus.....	"	5,081	5,267	5,432	5,609	5,774
Trolley coach.....	"	1,174	1,170	1,167	1,122	1,096
Streetcar.....	"	833	791	740	740	735
Subway car.....	"	140	158	170	170	334
<b>Finances—</b>						
Total assets.....	\$	285,697,114 <sup>2</sup>	292,158,071 <sup>3</sup>	298,479,381 <sup>3</sup>	262,078,164 <sup>3</sup>	288,415,768 <sup>3</sup>
Long-term debt.....	\$	176,600,938 <sup>3</sup>	179,674,576 <sup>3</sup>	188,892,505 <sup>3</sup>	145,993,895 <sup>3</sup>	161,536,125 <sup>3</sup>
Capital stock and surplus.....	\$	74,209,868 <sup>3</sup>	74,991,464 <sup>3</sup>	75,679,476 <sup>3</sup>	80,824,236 <sup>3</sup>	82,276,931 <sup>3</sup>
Operating revenues.....	\$	138,440,041	141,608,500	142,451,128	151,851,962	164,054,532
Operating expenses.....	\$	137,257,702	141,620,749	146,280,067	151,389,907	166,745,551
Ratio of expenses to revenues.....	p.c.	99.14	100.01	102.70	99.70	98.38
Employees.....	No.	18,100	18,157	18,182	17,961	18,645
Salaries and wages.....	\$	85,008,940	88,145,609	90,839,804	95,759,397	106,345,817

<sup>1</sup> Initial revenue passenger fares, excluding transfers.  
Columbia Hydro and Power Authority.

<sup>2</sup> Included in other items.

<sup>3</sup> Excludes British

There are two subway systems in operation in Canada. The Toronto subway was officially opened on Mar. 30, 1954 when 13.33 miles of track were placed in service and later additions brought the length of track to 18.25 miles by Dec. 31, 1965. The first 10 miles of a 16-mile addition under construction since 1963 were completed early in 1966 and the remaining six miles are scheduled for operation in December 1967. The Montreal subway went into public use on Oct. 17, 1966, with an over-all track length of 12.96 miles.

**Motor Vehicle Traffic Accidents.**—There were 398,127 motor vehicle traffic accidents reported in 1965 compared with 363,033 in the previous year. Deaths from such accidents continue their upward trend, numbering 4,652 in 1964 and 4,902 in 1965 as against 2,972 in 1955. Statistics for 1965, reported by place of occurrence, are given by province in Table 14 but it should be noted that, although motorists are required by law to report accidents, complete statistics of these accidents are not available for all provinces. According to DBS vital statistics data, reported on a different basis, there were 4,961 deaths from motor vehicle traffic accidents in 1965.

## 14.—Motor Vehicle Traffic Accidents, by Province, 1965

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
<b>Accidents Reported.</b>	<b>6,497</b>	<b>1,556</b>	<b>12,236</b>	<b>9,732</b>	<b>130,144</b>	<b>128,462</b>	<b>15,714</b>	<b>19,768</b>	<b>33,201</b>	<b>40,262</b>	<b>555</b>	<b>398,127</b>
Fatal.....	64	24	186	182	1,318	1,318	132	166	252	421	7	4,070
Non-fatal.....	1,409	402	2,382	2,602	26,356	41,047	5,067	4,272	5,425	11,557	161	100,680
Property damage <sup>1</sup> ..	5,024	1,130	9,668	6,948	102,470	86,097	10,515	15,330	27,524	28,284	387	293,377
<b>Persons Killed.....</b>	<b>72</b>	<b>25</b>	<b>209</b>	<b>204</b>	<b>1,541</b>	<b>1,611</b>	<b>178</b>	<b>223</b>	<b>331</b>	<b>500</b>	<b>8</b>	<b>4,902</b>
Drivers.....	16	9	77	61	499	598	73	87	153	189	3	1,765
Passengers.....	22	7	55	57	483	564	63	96	131	173	4	1,655
Pedestrians.....	31	8	69	80	485	387	30	28	33	102	1	1,254
Bicyclists.....	3	1	6	5	65	39	4	4	1	10	—	138
Motorcyclists and passengers.....	—	—	2	1	9	21	4	1	7	25	—	70
Others.....	—	—	—	—	—	2	4	7	6	1	—	20
<b>Persons Injured.....</b>	<b>2,011</b>	<b>608</b>	<b>3,397</b>	<b>3,908</b>	<b>39,109</b>	<b>60,917</b>	<b>7,309</b>	<b>6,926</b>	<b>8,596</b>	<b>17,574</b>	<b>257</b>	<b>150,612</b>
Drivers.....	555	246	1,180	1,535	11,034	25,603	3,248	2,933	3,391	6,940	104	56,769
Passengers.....	783	284	1,406	1,657	17,475	25,013	3,061	3,309	3,952	8,088	123	65,151
Pedestrians.....	602	66	673	527	8,076	6,740	574	400	743	1,449	12	19,862
Bicyclists.....	35	8	77	108	1,838	1,595	166	117	178	418	1	4,541
Motorcyclists and passengers.....	14	4	52	60	686	1,889	198	145	266	648	17	3,979
Others.....	22	—	9	21	—	77	62	22	66	31	—	310
<b>Total Property Damage.... \$'000</b>	<b>3,068</b>	<b>678</b>	<b>5,766</b>	<b>4,834</b>	<b>..</b>	<b>69,117</b>	<b>6,187</b>	<b>9,268</b>	<b>15,829</b>	<b>22,626</b>	<b>448</b>	<b>137,821<sup>2</sup></b>

<sup>1</sup> All reported accidents are those resulting in property damage estimated at \$100 or over.  
Quebec.

<sup>2</sup> Excludes

## PART IV.—WATER TRANSPORT\*

**The Canada Shipping Act.**—Legislation regarding all phases of shipping is consolidated in the Canada Shipping Act (RSC 1952, c. 29). Under the Act and its amendments the Parliament of Canada accepts full responsibility for the regulation of Canadian shipping.

## Section 1.—Shipping Facilities and Traffic

## Subsection 1.—Shipping

All Canadian waterways including canals, lakes and rivers are open on equal terms, except in the case of the coasting trade, to the shipping of all countries of the world so that Canadian shipping must compete with foreign flag shipping.

Within the region from approximately Havre St. Pierre on the St. Lawrence River upstream to the head of the Great Lakes, the carriage of goods or passengers from one Canadian port to another Canadian port, commonly known as the coasting trade, is restricted to ships registered in Canada. Elsewhere in Canada, the coasting trade is open to all Commonwealth ships.

\* Information and statistics dealing with this subject have been supplied as follows: aids to navigation, canals, harbours, administrative services, and marine services by the Department of Transport and the National Harbours Board; the St. Lawrence Seaway by the St. Lawrence Seaway Authority; part of the financial statistics by the Department of Public Works; shipping subsidies by the Director of Subsidized Steamship Services, Canadian Maritime Commission; and canal traffic and statistics of shipping by the Transportation and Public Utilities Division, Dominion Bureau of Statistics.

**Canadian Registry.**—Under Part I of the Canada Shipping Act, ships in excess of 15 tons net register and pleasure yachts in excess of 20 tons net are required to be registered; ships of lower tonnage may be registered voluntarily, otherwise they are required to be operated under a Vessel Licence if powered by a motor of 10 hp. or more. Sect. 6 of the Act restricts ownership to British subjects or bodies corporate incorporated under the law of a country of the Commonwealth or of the Republic of Ireland and having their principal place of business in those countries. Under the British Commonwealth Merchant Shipping Agreement, all Commonwealth ships are given the general designation 'British Ship', and a ship that should be but is not registered is not entitled to the privileges accorded to British ships. Ships in the planning stage or in course of construction may be recorded before registry by a Registrar of Shipping at one of the 75 Ports of Registry in Canada.

### 1.—Vessels on the Canadian Shipping Registry, by Province, as at Dec. 31, 1963-65

Note.—Figures from 1935 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Province or Territory	1963		1964		1965	
	Ships	Gross Tonnage	Ships	Gross Tonnage	Ships	Gross Tonnage
	No.	No.	No.	No.	No.	No.
Newfoundland.....	810	82,784	849	88,735	884	103,308
Prince Edward Island.....	779	20,219	819	20,922	922	21,515
Nova Scotia.....	6,600	155,388	6,943	166,439	7,259	176,273
New Brunswick.....	2,232	91,936	2,326	116,092	2,480	122,125
Quebec.....	2,780	892,466	2,912	919,936	2,999	1,013,820
Ontario.....	2,462	917,653	2,465	914,475	2,485	1,009,927
Manitoba.....	109	17,586	119	19,657	114	19,085
Saskatchewan.....	—	—	1	108	1	108
Alberta.....	12	681	12	686	12	686
British Columbia.....	7,006	678,598	7,266	709,662	7,569	798,994
Yukon Territory.....	6	1,435	6	1,435	6	1,435
<b>Totals.....</b>	<b>22,796</b>	<b>2,858,746</b>	<b>23,718</b>	<b>2,958,147</b>	<b>24,781</b>	<b>3,267,276</b>

**Shipping Traffic.**—Table 2 shows the number and tonnage of all vessels (except those of less than 15 registered net tons, naval vessels and, for 1962-65, fishing vessels) entering Canadian customs and non-customs ports. Previous to 1957, only the international coastwise movement of cargo in and out of customs ports was recorded.

### 2.—Vessels Entered at Canadian Ports, 1957-65

Year	In International Seaborne Shipping		In Coastwise Shipping		Totals	
	Vessels	Registered Net Tons	Vessels	Registered Net Tons	Vessels	Registered Net Tons
	No.	No.	No.	No.	No.	No.
1957.....	35,352	66,149,552	104,079	76,535,160	139,431	142,684,712
1958.....	30,710	57,738,034	100,234	76,197,625	130,944	133,935,659
1959.....	33,251	67,526,464	110,702	85,536,408	143,953	153,062,872
1960.....	33,397	74,805,002	120,125	88,493,116	153,522	163,298,118
1961.....	31,832	77,140,524	115,339	91,157,708	147,171	168,298,232
1962.....	30,269	81,942,501	112,325	87,767,018	142,594	169,709,519
1963.....	29,169	87,385,238	107,232	87,257,470	136,401	174,642,708
1964.....	29,809	92,799,912	105,186	91,007,726	134,995	183,807,638
1965.....	28,792	98,128,231	99,153	89,363,142	127,945	187,491,373



### 3.—Cargoes Loaded and Unloaded at Principal Canadian Ports from Vessels in International Seaborne and Coastwise Shipping, by Province, 1965 with Totals for 1964

NOTE.—Only ports handling over 300,000 tons are listed.

Province and Port	International		Coastwise		Total 1965	Total 1964
	Loaded	Unloaded	Loaded	Unloaded		
	tons	tons	tons	tons		
<b>Newfoundland</b> .....	<b>2,667,468</b>	<b>975,674</b>	<b>1,263,509</b>	<b>2,023,674</b>	<b>6,930,325</b>	<b>7,107,349</b>
Bell Island.....	1,152,306	110	185,788	18,365	1,356,569	1,453,325
Corner Brook.....	391,145	203,308	23,869	452,260	1,070,582	1,171,068
St. John's.....	42,232	235,829	47,347	474,64	800,048	1,004,605
Botwood.....	400,304	31,065	19,534	134,249	585,152	551,226
Holyrood.....	1,472	293,528	230,861	475	526,336	327,962
Port aux Basques.....	475	210	41,101	355,816	397,602	366,519
Stephenville.....	293,049	32,311	5,841	7,080	338,281	200,303
<b>Prince Edward Island</b> .....	<b>62,734</b>	<b>119,028</b>	<b>103,710</b>	<b>308,385</b>	<b>593,857</b>	<b>553,436</b>
Charlottetown.....	12,678	106,955	88,151	279,494	487,278	453,844
<b>Nova Scotia</b> .....	<b>6,690,955</b>	<b>4,911,791</b>	<b>3,858,675</b>	<b>1,518,176</b>	<b>16,979,597</b>	<b>17,575,134</b>
Halifax.....	2,912,532	4,032,062	2,105,070	498,132	9,547,796	9,175,845
Sydney.....	165,596	773,674	1,009,994	702,767	2,652,031	3,359,065
Hantsport.....	2,014,044	1,831	—	9,350	2,025,225	2,246,862
Port Hawkesbury.....	640,697	67,811	27,640	17,525	753,673	833,214
Little Narrows (incl. with Bad- deck in 1964).....	184,309	—	225,993	2	410,304	—
North Sydney.....	9,838	75	364,396	30,571	404,880	378,878
<b>New Brunswick</b> .....	<b>2,576,595</b>	<b>2,967,063</b>	<b>1,221,693</b>	<b>1,073,318</b>	<b>7,838,668</b>	<b>7,647,365</b>
Saint John.....	1,475,182	2,744,973	1,124,707	472,999	5,817,861	5,833,131
Dalhousie.....	681,578	23,138	—	—	704,716	504,404
Newcastle.....	163,386	14,468	50	150,885	328,789	330,870
Chatham.....	60,599	27,708	6,689	227,636	322,632	253,080
<b>Quebec</b> .....	<b>41,131,002</b>	<b>16,620,541</b>	<b>9,378,858</b>	<b>16,246,751</b>	<b>83,377,152</b>	<b>81,101,691</b>
Montreal.....	4,896,425	7,689,576	4,239,991	5,085,342	21,911,334	21,562,943
Sept Iles.....	16,677,891	578,244	1,222,060	196,352	18,674,647	16,598,933
Port Cartier.....	9,093,794	68,135	171,432	20,809	9,354,170	10,224,551
Baie Comeau.....	4,023,522	2,016,413	174,270	2,221,004	8,435,209	8,305,563
Quebec.....	1,722,795	1,404,148	197,085	3,005,177	6,329,205	6,088,295
Trois-Rivières.....	1,926,647	1,390,088	80,632	1,378,522	4,775,889	4,547,609
Sorel.....	1,638,452	419,765	75,332	2,458,379	4,591,928	4,359,499
Port Alfred.....	417,536	2,436,319	27,220	440,293	3,321,368	3,312,525
Havre St. Pierre.....	—	—	1,431,999	10,590	1,442,589	1,371,526
Contrecoeur.....	378,164	511,399	66,557	10,083	966,203	1,001,274
Forestville.....	—	—	853,432	45,522	898,954	928,053
Rimouski.....	45,638	27,428	96,907	371,695	541,668	415,404
Chicoutimi.....	1,000	19,374	6,106	486,473	512,953	514,598
<b>Ontario</b> .....	<b>9,230,155</b>	<b>24,092,619</b>	<b>19,675,381</b>	<b>14,103,370</b>	<b>67,101,525</b>	<b>68,139,125</b>
Port Arthur-Fort William.....	3,798,903	307,077	11,839,506	1,062,199	17,037,685	18,398,270
Hamilton.....	204,482	7,842,214	508,233	1,738,686	10,293,615	9,392,558
Toronto.....	251,965	3,828,025	249,432	1,496,678	5,826,100	5,713,090
Sault Ste. Marie.....	242,900	3,691,580	305,327	1,163,209	5,403,016	5,681,169
Sarnia.....	168,037	1,208,386	2,283,683	514,717	4,174,823	3,794,732
Port Colborne.....	1,210,657	473,246	295,515	945,695	2,925,113	3,563,153
Windsor.....	441,019	1,179,424	396,849	398,557	2,415,849	2,056,934
Port Credit.....	12,034	1,512,712	191,398	263,143	1,979,287	1,972,391
Clarkson.....	24,850	162,613	399,185	1,347,380	1,934,028	1,679,841
Prescott.....	41,058	433,329	276,334	556,179	1,306,900	1,104,522
Pictou.....	715,063	151,860	289,082	43,399	1,199,404	1,391,086
Little Current.....	562,622	543,503	5,450	39,824	1,151,399	1,099,984
Colborne.....	—	—	1,079,950	—	1,079,950	1,126,073
Goderich.....	284,560	31,748	357,645	403,740	1,077,693	874,497
Depot Harbour.....	726,120	—	—	8,250	734,370	727,278
Midland.....	—	49,125	62,463	612,769	724,357	733,070
Kingston.....	—	125,153	196,193	354,081	675,427	682,524
Thorold.....	118,829	335,081	43,373	177,333	674,616	824,405
Walkerville.....	—	295,803	25,771	158,652	48,226	471,288
Michipicoten Harbour.....	210,140	30,791	161,490	39,883	442,304	468,336
Parry Sound.....	—	18,906	2,998	399,239	421,143	349,446
Owen Sound.....	—	27,327	11,263	372,335	410,925	418,826
Port Stanley.....	—	223,872	14,348	159,964	398,184	351,184

1 Includes Pointe Noire.

**3.—Cargoes Loaded and Unloaded at Principal Canadian Ports from Vessels in International Seaborne and Coastwise Shipping, by Province, 1965 with Totals for 1964—concluded**

Province or Territory and Port	International		Coastwise		Total 1965	Total 1964
	Loaded	Unloaded	Loaded	Unloaded		
	tons	tons	tons	tons		
<b>Ontario—concluded</b>						
Port McNicoll.....	—	5,531	3,945	365,725	375,201	323,297
Belleville.....	—	183,653	116,028	37,501	337,182	206,837
Marathon.....	103,755	107,582	33,600	80,953	325,890	242,432
Port Burwell.....	396	307,951	—	4,052	312,399	336,368
Oshawa.....	719	148,279	—	153,730	302,728	276,712
<b>Manitoba.....</b>	<b>740,755</b>	<b>20,269</b>	<b>5,858</b>	<b>95</b>	<b>766,977</b>	<b>711,992</b>
Churchill.....	740,755	20,269	5,858	95	766,977	711,568
<b>British Columbia.....</b>	<b>19,045,757</b>	<b>3,937,756</b>	<b>17,623,028</b>	<b>17,778,920</b>	<b>58,385,461</b>	<b>52,072,705</b>
Vancouver.....	9,290,502	2,067,296	4,746,967	4,397,324	20,502,089	20,055,635
New Westminster.....	1,017,900	197,578	2,359,877	1,283,352	4,858,707	4,371,033
Victoria.....	1,003,889	146,003	333,987	920,953	2,404,832	2,663,717
Nanaimo.....	646,923	77,202	507,053	734,732	1,965,910	1,254,483
Duncan Bay.....	286,969	33,635	111,270	1,426,124	1,865,998	1,374,750
Powell River.....	322,454	50,830	315,203	953,177	1,641,664	1,368,240
Britannia Beach.....	52,612	7,874	873,821	645,887	1,580,124	1,393,003
Ocean Falls.....	74,920	90,559	367,771	857,809	1,391,059	1,176,760
Crofton.....	294,656	91,628	230,764	716,131	1,333,179	1,008,399
Prince Rupert.....	561,555	324,884	88,067	336,329	1,310,835	1,269,779
Port Alberni.....	750,708	60,386	20,165	419,112	1,250,371	898,613
Port Mellon.....	66,544	5,459	53,381	994,915	1,120,299	895,527
North Arm Fraser River.....	—	—	182,562	834,934	1,017,496	659,594
Howe Sound.....	—	6,700	420,112	533,016	959,828	892,192
Kitimat.....	87,878	492,371	147,201	80,785	808,235	686,148
Blubber Bay.....	753,630	—	36,126	1,465	791,221	196,160
Ladysmith.....	1,805	2,173	685,493	58,671	748,142	765,815
Port Moody.....	671,453	3,833	17,075	—	692,361	589,007
Texada.....	683,088	—	40	2,445	685,573	497,710
Toquart.....	658,783	—	—	—	658,783	763,777
Courtenay.....	—	—	538,151	63,913	602,064	476,269
Harmac.....	7,806	48,105	21,799	474,043	551,753	1,241,085
Chemainus.....	300,066	6,874	154,862	21,883	483,685	656,491
Campbell River.....	182,277	14,970	25,766	244,077	467,090	465,100
Quatsino.....	55,972	99,583	94,046	135,276	384,877	424,460
Tahsis (incl. with Victoria in 1964)	338,032	—	11,490	21,756	371,278	—
Jervis Inlet.....	—	—	241,940	92,409	334,349	377,050
Bamberton.....	9,836	24,684	277,109	12,232	323,861	301,057
Blind Bay.....	—	—	200,920	119,016	319,936	—
Zeballos.....	249,199	—	55,218	4,994	309,411	163,475
<b>Northwest Territories.....</b>	<b>—</b>	<b>—</b>	<b>493</b>	<b>41,563</b>	<b>42,056</b>	<b>42,317</b>
<b>Totals.....</b>	<b>82,145,421</b>	<b>53,644,740</b>	<b>53,131,205</b>	<b>53,094,252</b>	<b>242,015,618</b>	<b>234,951,117</b>

The freight movement through a large port takes a number of different forms. These include cargoes loaded for and unloaded from foreign countries and cargoes loaded and unloaded in coastwise shipping, i.e., domestic freight moving between Canadian points. There is, as well, the in-transit movement in vessels that pass through the harbour without loading or unloading and the movement from one point to another within the harbour, which in many ports amounts to a large volume.

Shipping statistics, which cover traffic in and out of both customs and non-customs ports, do not include freight in transit or freight moved from one point to another within the harbour. Table 4 shows the principal commodities loaded and unloaded in foreign and coastwise shipping at the 12 ports handling the largest cargo volumes in 1965. These ports handled 65.8 p.c. of all Canada's international shipping and 44.7 of the coastwise trade. The specific commodities shown are those transported in volume and often in bulk form.

#### 4.—Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handling the Largest Tonnages in 1965

NOTE.—Only commodities totalling over 50,000 tons are listed.

Port and Commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	
<b>Montreal</b> .....	<b>4,896,425</b>	<b>7,689,576</b>	<b>4,239,991</b>	<b>5,085,342</b>	<b>21,911,334</b>
Wheat.....	2,429,691	95,308	—	3,180,758	5,705,757
Fuel oil.....	82,401	2,144,661	2,148,636	56,013	4,431,711
Crude petroleum.....	—	2,174,413	10,833	21,096	2,206,342
Gasoline.....	—	60,541	1,090,044	4,685	1,155,270
Corn.....	226,379	334,907	—	20,768	582,054
Coal, bituminous.....	—	430,338	—	141,773	572,111
Raw sugar.....	—	350,302	—	—	380,302
Gypsum.....	—	4	2,200	367,973	370,177
Structural shapes.....	4,197	271,037	8,025	14,447	297,706
Barley.....	49,666	—	—	233,213	282,879
Plate and sheet steel.....	48,994	48,072	8,366	171,855	277,287
Salt.....	—	24,038	21	216,848	240,907
Cement.....	6	18,589	209,870	—	228,465
Lubricating oil and grease.....	133	47,203	144,726	15,902	207,964
Soybeans.....	115,432	49,564	3,890	32,315	201,201
Wheat flour.....	189,888	40	6,357	955	197,240
Oats.....	11,375	—	—	132,693	144,068
Petroleum coal products, <i>n.e.s.</i> .....	7,109	24,591	10,122	63,277	105,099
Manganese ore.....	8,727	87,141	3,662	—	99,530
Bars and rods, steel.....	4,124	61,617	13,330	18,723	97,794
Molasses, crude.....	—	85,083	—	—	85,083
Flaxseed.....	34,825	—	1,359	45,775	81,959
Miscellaneous food preparations, <i>n.e.s.</i> .....	2,135	1,055	40,480	37,552	81,252
Copper and alloys.....	61,670	271	250	2,821	65,012
Crude non-metallic minerals, <i>n.e.s.</i> .....	45,846	16,627	—	—	62,473
Other commodities not listed.....	1,573,827	1,334,174	537,820	305,870	3,751,691
<b>Vancouver</b> .....	<b>9,290,502</b>	<b>2,067,296</b>	<b>4,746,967</b>	<b>4,397,324</b>	<b>20,502,089</b>
Wheat.....	3,688,822	—	5,040	—	3,693,882
Pulpwood.....	326,133	10,062	1,884,576	204,004	2,424,775
Sand and gravel.....	900	332,542	12,408	1,780,403	2,126,253
Lumber and timber.....	1,342,790	11,913	47,846	193,530	1,596,079
Logs.....	103,599	195,623	109,051	722,382	1,130,655
Fuel oil.....	13,603	243,361	842,499	2,682	1,102,145
Hogged fuel.....	188,432	—	734,053	2,600	925,085
Fertilizers.....	773,171	5,723	3,849	885	783,628
Pulp.....	130,898	1,977	1,700	517,831	652,406
Sulphur in ores.....	574,520	—	26,845	—	601,365
Newsprint paper.....	33,142	30	—	443,991	477,163
Barley.....	464,991	—	—	—	464,991
Coal, bituminous.....	450,628	—	239	220	451,087
Gasoline.....	8,494	27,180	342,746	468	378,888
Salt.....	—	200,780	34,356	—	235,136
Rapeseed.....	223,885	—	—	—	223,885
Cement.....	6,194	2,828	9,063	153,886	171,971
Flaxseed.....	156,997	—	—	—	156,997
Phosphate rock.....	—	150,934	—	—	150,934
Inorganic chemicals.....	2,436	2,913	135,484	1,000	141,833
Plate and sheet steel.....	50	119,768	2,347	—	122,165
Copper ore and concentrates.....	119,117	—	—	—	119,117
Asbestos.....	42,981	55,437	340	—	98,758
Organic chemicals.....	3,977	2,307	77,619	500	84,403
Raw sugar.....	—	84,257	—	—	84,257
Wheat flour.....	76,425	6	—	—	76,431
Stone, crude, <i>n.e.s.</i> .....	—	127	5	73,275	73,407
Limestone.....	10,108	—	4,900	56,926	71,934
Concentrated complete feeds.....	71,097	24	58	8	71,187
Oats.....	62,176	—	—	—	62,176
Rye.....	60,687	—	—	—	60,687
Metallic salts.....	159	40,177	15,577	50	55,963
Structural shapes.....	645	48,284	6,174	152	55,255
Lubricating oil and grease.....	151	7,943	46,860	56	55,010
Other commodities not listed.....	353,294	523,100	403,312	242,475	1,522,181
<b>Port Arthur—Fort William</b> .....	<b>3,798,903</b>	<b>307,077</b>	<b>11,839,506</b>	<b>1,092,199</b>	<b>17,037,685</b>
Wheat.....	131,433	—	9,064,874	—	9,246,307
Iron ore and concentrates.....	2,433,965	—	716,345	—	3,150,310



#### 4.—Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handling the Largest Tonnages in 1965—continued

Port and Commodity	International		Coastwise		Total  tons
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	
<b>Port Arthur-Fort William—concluded</b>					
Barley.....	266,509	—	888,187	—	1,154,696
Oats.....	171,617	—	609,899	—	781,516
Pulpwood.....	80,100	—	4,630	228,750	313,480
Flaxseed.....	201,701	—	103,319	—	305,020
Fuel oil.....	—	—	—	232,902	232,902
Coal, bituminous.....	—	232,074	—	—	232,074
Newsprint paper.....	183,351	—	834	—	184,185
Wheat flour.....	26,923	—	128,354	1,016	156,293
Gasoline.....	—	—	—	132,781	132,781
Rye.....	61,580	—	47,257	—	108,837
Ground cereals, n.e.s.....	5,873	—	77,104	73	83,050
Malt and malt flour.....	18,226	—	62,288	—	80,514
Hulls, screenings, chaff.....	9,733	—	66,556	—	76,289
Salt.....	—	—	—	66,042	66,042
Concentrated complete feeds.....	57,920	—	4,855	—	62,775
Fertilizers.....	52,315	—	—	—	52,315
Other commodities not listed.....	47,657	75,003	65,004	430,635	618,299
<b>Sept Îles</b>	<b>15,296,483</b>	<b>482,598</b>	<b>469,870</b>	<b>177,374</b>	<b>16,426,325</b>
Iron ore and concentrates.....	15,257,460	—	453,872	—	15,711,332
Fuel oil.....	—	408,004	3,368	29,056	440,428
Bentonite.....	—	53,904	—	200	54,104
Other commodities not listed.....	39,023	20,690	12,630	148,118	220,461
<b>Hamilton</b>	<b>204,482</b>	<b>7,842,214</b>	<b>508,233</b>	<b>1,738,686</b>	<b>10,293,615</b>
Iron ore and concentrates.....	21	3,355,561	—	1,029,079	4,384,661
Coal, bituminous.....	—	3,205,618	6,424	—	3,212,042
Fuel oil.....	99	113,011	—	400,499	513,609
Plate and sheet steel.....	19,379	89,999	130,310	789	240,477
Wheat.....	—	—	103,760	63,467	167,227
Soybeans.....	—	144,803	—	3,890	148,693
Bars and rods, steel.....	7,297	102,971	17,970	1,924	130,162
Gasoline.....	—	—	—	58,926	58,926
Soybean oil meal and cake.....	58,225	340	—	—	58,565
Other commodities not listed.....	119,461	329,911	249,769	180,112	879,253
<b>Halifax</b>	<b>2,912,532</b>	<b>4,032,062</b>	<b>2,105,070</b>	<b>498,132</b>	<b>9,547,796</b>
Crude petroleum.....	—	3,089,838	—	—	3,089,838
Fuel oil.....	18,217	668,323	1,347,014	96,971	2,130,525
Gypsum.....	1,744,820	—	128,089	—	1,872,909
Gasoline.....	—	7,086	566,084	91,313	664,483
Wheat.....	462,831	—	—	145,026	607,857
Wheat flour.....	126,107	—	6,374	3,613	136,094
Cement.....	13	144	—	58,396	58,553
Iron ore and concentrates.....	17	44,161	—	8,400	52,578
Lumber and timber.....	44,499	5,578	349	50	50,476
Other commodities not listed.....	516,028	216,932	57,160	94,363	884,483
<b>Port Cartier</b>	<b>9,093,794</b>	<b>68,135</b>	<b>171,432</b>	<b>20,809</b>	<b>9,354,170</b>
Iron ore and concentrates.....	9,093,794	—	169,933	—	9,263,727
Fuel oil.....	—	68,135	—	—	68,135
Other commodities not listed.....	—	—	1,499	20,809	22,308
<b>Bale Comeau</b>	<b>4,023,522</b>	<b>2,016,413</b>	<b>174,270</b>	<b>2,221,004</b>	<b>8,435,209</b>
Wheat.....	2,214,086	418,190	—	1,794,531	4,426,807
Corn.....	890,645	859,708	—	—	1,750,353
Soybeans.....	336,861	303,193	—	—	640,054
Pulpwood.....	161,638	—	146,520	—	308,158
Newsprint paper.....	260,224	—	—	—	260,224
Fuel oil.....	—	102,494	—	85,077	187,571
Cement.....	—	—	—	178,348	178,348
Barley.....	78,596	76,459	—	—	155,055
Alumina and bauxite ore.....	—	151,558	—	—	151,558
Aluminum.....	59,001	—	15,042	—	74,043
Gasoline.....	—	—	—	50,470	50,470
Other commodities not listed.....	22,471	104,811	12,708	112,578	252,568

#### 4.—Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handling the Largest Tonnages in 1965—concluded

Port and Commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	tons
<b>Quebec</b> .....	<b>1,722,795</b>	<b>1,404,148</b>	<b>197,085</b>	<b>3,005,177</b>	<b>6,329,205</b>
Fuel oil.....	—	918,973	58,053	464,154	1,441,180
Wheat.....	524,535	30,186	—	548,655	1,103,376
Pulpwood.....	11,918	—	710	941,470	954,098
Gasoline.....	—	26,025	8,452	512,854	547,331
Corn.....	126,383	184,068	—	—	310,451
Newsprint paper.....	309,689	—	—	—	309,689
Asbestos.....	233,210	—	—	—	233,210
Coal, bituminous.....	—	31,728	600	177,125	209,453
Zinc ore and concentrates.....	194,762	—	—	3,954	198,716
Barley.....	11,091	12,434	—	165,829	189,354
Oats.....	—	—	—	134,630	134,630
Soybeans.....	40,306	58,979	—	2,357	101,642
Lumber and timber.....	71,404	—	964	333	72,701
Cement.....	—	40	70,606	—	70,646
Pulp.....	65,078	—	240	—	65,318
Copper ore and concentrates.....	60,302	—	—	—	60,302
Other commodities not listed.....	74,117	141,715	57,460	53,816	327,108
<b>Toronto</b> .....	<b>251,965</b>	<b>3,828,025</b>	<b>242,432</b>	<b>1,496,678</b>	<b>5,826,100</b>
Coal, bituminous.....	—	2,396,528	2,316	436,175	2,835,019
Fuel oil.....	—	283,438	88,554	238,489	610,481
Soybeans.....	—	302,914	—	907	303,821
Cement.....	—	—	—	264,812	264,812
Gasoline.....	—	31,847	132,369	7,177	171,393
Wheat.....	53	—	3,438	139,743	143,234
Salt.....	—	32,898	—	100,378	133,276
Raw sugar.....	—	125,487	—	—	125,487
Barley.....	2,548	—	2,800	101,569	106,917
Soybean oil meal and cake.....	100,202	—	—	—	100,202
Limestone.....	—	—	—	86,701	86,701
Lubricating oil and grease.....	—	64,937	—	5,720	70,657
Structural shapes.....	17	58,257	93	1,402	59,769
Other commodities not listed.....	149,145	531,719	19,862	113,605	814,331
<b>Saint John</b> .....	<b>1,475,182</b>	<b>2,744,973</b>	<b>1,124,767</b>	<b>472,999</b>	<b>5,817,861</b>
Crude petroleum.....	—	2,118,870	—	—	2,118,870
Fuel oil.....	54	78,531	741,076	271,209	1,090,870
Wheat.....	633,064	—	—	—	633,064
Gasoline.....	—	—	332,047	171,161	503,208
Raw sugar.....	—	262,746	—	—	262,746
Newsprint paper.....	83,738	—	—	—	83,738
Lumber and timber.....	57,392	724	29	—	58,145
Other commodities not listed.....	700,934	284,102	51,555	30,629	1,067,220
<b>Sault Ste. Marie</b> .....	<b>242,900</b>	<b>3,691,580</b>	<b>305,327</b>	<b>1,163,209</b>	<b>5,403,016</b>
Coal, bituminous.....	11,751	2,267,964	—	3,600	2,283,315
Iron ore and concentrates.....	—	841,831	—	670,409	1,512,240
Limestone.....	—	547,730	—	—	547,730
Fuel oil.....	—	—	—	324,130	324,130
Primary iron and steel, <i>n.e.s.</i> .....	161,441	—	24,394	87	185,922
Plate and sheet steel.....	22,688	11,990	104,862	46	139,586
Gasoline.....	—	—	—	92,130	92,130
Structural shapes.....	42	40	53,446	128	53,656
Other commodities not listed.....	46,978	22,025	122,625	72,679	264,307

#### Subsection 2.—Harbours

Water transportation cannot be studied with any degree of completeness without taking into consideration the co-ordination of land and water transportation at many of the ports. Facilities provided to enable interchange movements include the necessary docks and wharves, some for passenger traffic but most of them for freight, warehouses for

handling of general cargo, and special equipment for bulk freight of all kinds. Facilities may include cold storage warehouses, harbour railway and switching connections, grain elevators, coal bunkers, oil storage tanks and, in the chief harbours, vessel repair docks.

Nine of the principal harbours of Canada are administered by the National Harbours Board and 11 other major harbours are administered by Harbour Commissioners, which include municipal as well as Federal Government appointees. In addition, there are about 300 public harbours under the direct supervision of the Department of Transport, administered under rules and regulations approved by the Governor General in Council. Harbour masters are appointed by the Minister of Transport for these harbours, their remuneration being paid from fees levied on vessels, under the terms of the Canada Shipping Act.

Throughout the country there are several thousand wharves and breakwaters administered by the Department of Transport under the Government Harbours and Piers Act. These facilities are for the accommodation of cargo ships and commercial fishing craft and are under the general supervision of the Department of Transport District Marine Agents. Wharfingers, whose remuneration is determined as a percentage of wharfage fees collected, are appointed for the direct supervision of these public wharves and floats. They are designed to accommodate the smallest fishing or pleasure craft or the largest ocean-going vessels, according to local requirements. At many ports, in addition to public harbour works operated by the administering authority, there are extensive dock and handling facilities owned by private companies including railway, lumber, pulp and paper, coal, steel, iron ore, petroleum, grain, fish and other industries moving large volumes of bulk materials.

In 1965, the harbours of Canada handled more than 240,000,000 tons of cargo in more than 250,000 vessel arrivals and departures in international seaborne and coastwise shipping.

**National Harbours Board.**—The National Harbours Board, a Crown corporation established in 1936, is charged with the administration and operation of the following properties: port facilities such as wharves and piers, transit sheds, grain elevators, cold storage warehouses, terminal railways, etc., at the harbours of St. John's, Halifax, Saint John, Chicoutimi, Quebec, Trois-Rivières, Montreal, Vancouver and Churchill; grain elevators at Prescott and Port Colborne; and the Jacques Cartier and Champlain Bridges at Montreal. Facilities at the larger harbours are listed in Table 5, and summary traffic statistics for 1964 and 1965 in Table 6. Operating revenues and expenditures are given in Table 20, p. 837.

#### 5.—Facilities of the Larger Harbours Administered by the National Harbours Board, as at Dec. 31, 1965

NOTE.—The facilities at these ports include those under the control of other agencies as well as those of the National Harbours Board.

Item	Halifax	Saint John	Quebec	Trois-Rivières	Montreal	Vancouver
Minimum depth of approach channel..... ft.	51	30	31	35	35	39
Harbour railway..... miles	31	64	23	5	59.5	75
Piers, wharves, jetties, etc.. No.	88	34	44	18	135	110
Length of berthing..... ft.	35,445	22,550	35,600	9,188	74,000	41,812
Transit-shed floor space..sq. ft.	1,547,500	938,000	677,700	482,365	3,750,000	1,552,600
Cold storage warehouse capacity.....cu. ft.	1,719,000	900,000	1,500,000 <sup>1</sup>	—	2,900,000	4,633,547

<sup>1</sup> Main warehouse 500,000 cu. ft., fish house 1,000,000 cu. ft.



**5.—Facilities of the Larger Harbours Administered by the National Harbours Board,  
as at Dec. 31, 1965—concluded**

Item	Halifax	Saint John	Quebec	Trois-Rivières	Montreal	Vancouver
Grain Elevators—						
Capacity..... bu.	4,152,500	3,000,000	8,000,000	9,300,000	22,262,000	21,775,000
Loading rate..... bu. per hr.	90,000	150,000	90,000	55,000	728,000	280,000
Floating crane capacity... tons	80	65	75	—	365	75
Coal dock storage capacity. "	12,000	—	3,000,000 <sup>1</sup>	400,000	175,000	110,000
Oil tank storage capacity.. gal.	253,680,000	41,346,500	1,760,000 <sup>2</sup>	39,309,479	1,278,885,925	346,967,500

<sup>1</sup> Sq. ft.<sup>2</sup> Bbl.

**6.—Summary Traffic Statistics for Harbours Administered by the  
National Harbours Board, 1964 and 1965**

Port or Elevator	Vessel Arrivals	Vessel Tonnage	Cargo Tonnage	Grain Elevator Deliveries
	No.	No.	No.	bu.
St. John's, Nfld. <sup>1</sup> .....1965	1,851	1,437,229	466,203	—
Halifax.....1964	3,377	6,710,705	9,628,658	23,288,469
.....1965	3,372	6,989,871	9,952,713	22,429,328
Saint John.....1964	1,888	4,163,850	6,262,591	22,053,690
.....1965	1,792	4,044,562	6,115,008	24,337,092
Chicoutimi.....1964	156	281,313	477,524	...
.....1965	155	280,020	518,660	...
Quebec.....1964	3,469	7,742,000	6,258,920	44,081,825
.....1965	3,151	7,872,000	6,646,453	49,272,586
Trois-Rivières.....1964	2,325	3,963,914	5,192,812	54,917,501
.....1965	2,061	3,937,558	5,222,689	59,958,980
Montreal.....1964	6,016	19,704,942	23,070,920	168,713,104
.....1965	6,318	21,646,140	23,445,236	142,642,311
Prescott.....1964	...	...	...	15,582,409
.....1965	...	...	...	20,317,332
Port Colborne.....1964	...	...	...	12,908,529
.....1965	...	...	...	10,104,816
Churchill.....1964	72	296,059	719,382	22,067,711
.....1965	98	318,295	780,248	25,002,972
Vancouver.....1964	21,462	18,670,875	19,793,810	204,013,205
.....1965	21,746	19,220,510	20,166,534	169,205,721
<b>Totals.....1964</b>	<b>38,765</b>	<b>61,533,658</b>	<b>71,404,617</b>	<b>567,626,443</b>
<b>.....1965</b>	<b>40,554</b>	<b>65,746,185</b>	<b>73,313,834</b>	<b>523,271,138</b>

<sup>1</sup> Under the administration of the National Harbours Board since Jan. 1, 1965.

**Subsection 3.—Canals**

The canals and canalized waters of Canada under the jurisdiction of the Department of Transport, together with those under the jurisdiction of the St. Lawrence Seaway Authority, comprise a series of waterways providing navigation for 1,875 miles inland from salt water.

Those included under the two classifications—Seaway canals and Department of Transport canals—are listed in Table 7 with their locations, lengths and lock complement. In addition to these, the federal Department of Public Works administers the St. Andrew's Lock (length, width and draught, respectively, 215, 45 and 17 feet) on the Red River at Selkirk, Man., and the lock at Poupore, Que. A few small locks are operated by provincial authorities.

During 1965, 99,395,117 tons of freight and 23,356 vessels passed through the canals as compared with 93,276,850 tons of freight and 23,155 vessels during 1964. In addition to freight and passenger vessels, thousands of pleasure craft are locked through the canals. Vessels locking at Sault Ste. Marie during 1965 carried 157,813 passengers as compared with 131,396 in 1964.

**7.—Lengths of Channels and Dimensions of Locks under the Control of the St. Lawrence Seaway Authority or the Department of Transport**

Name	Location	Length of Channel	Locks			
			No.	Minimum Dimensions		
				Length	Width	Depth
		miles		ft.	ft.	ft.
<b>Seaway Canals<sup>1</sup></b>						
<b>Main Route—</b>						
South Shore.....	Montreal to Caughnawaga.....	20	2	766	80	30
Beauharnois.....	Melocheville to Lake St. Francis.....	15	2	766	80	30
Iroquois.....	Iroquois Point.....	1	1	766	80	30
Welland.....	Port Weller, Lake Ontario, to Port Colborne, Lake Erie.....	27.60	8	859	80	30
<b>Non-toll—</b>						
Lachine (not through canal).....	Montreal to Lachine.....	8	3	270	45	14
Cornwall (not through canal).....	Cornwall to closure dyke.....	3.50	4	270	43.67	14
Sault Ste. Marie.....	St. Mary's Rapids, Sault Ste. Marie....	1.88	1	900	60	18.25
<b>Department of Transport Canals</b>						
<b>Atlantic Area—</b>						
Canso Canal.....	Canso Causeway, N.S.....	0.78	1	820	80	32
St. Peter's.....	St. Peter's Bay to Bras d'Or Lakes, Cape Breton, N.S.....	0.50	1	300	47.4	17
<b>Richelieu River—</b>						
St. Ours.....	St. Ours, Que.....	0.12	1	339	45	12
Chambly.....	Chambly to St. Jean, Que.....	11.76	9	125.1	23.3	6.5
<b>Ottawa and Rideau Rivers—</b>						
St. Anne.....	Junction of St. Lawrence and Ottawa Rivers.....	0.62	1	200	45	9
Carillon.....	Carillon Rapids, Ottawa River.....	0.50	1	200	45	9
Rideau.....	Ottawa to Kingston.....	123.53	47	134	33	5.5
	Rideau Lake to Perth (Tay Branch)...	6.12	2	134	33	5.5
<b>Lake Ontario to Georgian Bay—</b>						
Trent.....	Trenton to Peterborough lock, Peterborough.....	88.74	13	175	33	8 <sup>2</sup>
	Peterborough lock to Pig Chute.....	143.71	24	134	33	6
	Big Chute Marine Railway.....	—	—	—	—	4
	Big Chute to Port Severn.....	8.11	1	100	25	6
	Sturgeon Lake to Lindsay (Scugog Branch).....	10.00	1	142	33	6
	Lindsay to Port Perry (Scugog Branch).....	25.00	—	—	—	4.5
Murray.....	Isthmus of Murray, Bay of Quinte.....	7.53	—	—	—	8.5 <sup>3</sup>

<sup>1</sup> Minimum depth of Seaway canals is 27 feet and minimum width 200 feet. Wiley-Dondero canal and two locks near Massena, N.Y., are in United States territory; dimensions are approximately the same as those of Canadian facilities. <sup>2</sup> Notice must be given by vessels of more than six-foot draught. <sup>3</sup> With Lake Ontario at elevation of 243 feet.

### 8.—Traffic through Canadian Canals, by Registry of Vessel, Navigation Seasons 1956-65

NOTE.—Figures include duplications where vessels pass through two or more canals. Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 1902 edition.

Navigation Season	Canadian		United States		United Kingdom		Other	
	Vessels	Registered Tonnage	Vessels	Registered Tonnage	Vessels	Registered Tonnage	Vessels	Registered Tonnage
	No.	No.	No.	No.	No.	No.	No.	No.
1956.....	27,473	31,019,188	3,776	3,675,511	267	186,978	1,349	1,141,259
1957.....	24,191	27,726,358	3,324	3,802,909	332	221,254	1,589	1,364,205
1958.....	21,763	26,635,559	3,216	3,029,624	302	198,926	2,170	1,793,309
1959.....	21,363	28,706,462	4,819	4,233,936	1,125	3,130,140	3,252	7,321,449
1960.....	19,816	28,963,294	5,046	3,660,931	1,303	3,971,587	3,464	9,455,739
1961.....	17,332	32,531,256	3,307	2,515,202	1,845	6,294,753	3,496	10,065,901
1962.....	13,836	31,677,612	3,524	4,045,470	1,638	6,769,909	3,538	11,017,809
1963.....	13,821	38,040,238	3,106	4,016,111	1,637	6,932,454	3,247	10,248,060
1964.....	14,256	40,025,355	2,906	5,461,310	2,043	9,494,484	3,950	13,176,847
1965.....	12,959	42,704,703	2,827	3,966,615	2,399	10,852,520	5,171	14,963,462

### 9.—Freight Traffic through Canadian Canals, by Origin of Cargo, Navigation Seasons 1956-65

NOTE.—Figures include duplications where cargoes pass through two or more canals. Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 1902 edition.

Navigation Season	Canada		United States		Britain		Other		Total
	Tons	P.C. of Total	Tons	P.C. of Total	Tons	P.C. of Total	Tons	P.C. of Total	Tons
1956.....	24,698,001	61.7	14,457,217	36.1	106,448	0.3	754,899	1.9	40,016,565
1957.....	21,459,552	57.6	15,021,930	40.3	151,550	0.4	597,317	1.6	37,230,349
1958.....	21,832,526	62.2	12,177,376	34.7	223,059	0.6	863,626	2.5	35,096,587
1959.....	30,829,746	60.4	17,134,694	33.5	326,992	0.6	2,784,700	5.5	51,076,132
1960.....	28,886,228	54.6	20,993,117	39.6	332,794	0.6	2,734,744	5.2	52,946,883
1961.....	31,487,898	55.1	23,175,964	40.5	315,991	0.5	2,242,843	3.9	57,222,696
1962.....	33,972,361	53.4	26,228,794	41.3	805,831	1.3	2,561,305	4.0	63,568,291
1963.....	41,976,843	56.3	28,431,960	38.1	1,054,929	1.4	3,121,695	4.2	74,585,427
1964.....	56,298,982	60.3	31,488,638	33.8	1,089,385	1.2	4,399,845	4.7	93,276,850
1965.....	56,008,416	56.3	33,747,380	34.0	2,088,813	2.1	7,550,508	7.6	99,395,117



### 10.—Tonnage of Products Carried by Canal, classified by Commodity Section,<sup>1</sup> Navigation Seasons 1964 and 1965

NOTE.—Figures include duplications where cargoes pass through two or more canals.

Year and Canal	Food, Feed, Beverages and Tobacco	Crude Materials, Inedible	Fabricated Materials, Inedible	End Products, Inedible	Miscel- laneous Freight	Domestic Package Freight	Total
	tons	tons	tons	tons	tons	tons	tons
<b>1964</b>							
Sault Ste. Marie.....	95,339	158,780	562,293	—	8,628	141,597	966,637
Welland.....	17,332,721	28,241,436	4,970,334	283,057	64,930	523,904	51,416,382
St. Lawrence River.....	16,485,395	16,394,652	5,374,405	356,238	128,214	701,269	39,440,173
Richelieu River.....	—	—	91,675	—	463	—	92,138
St. Peter's.....	304	110	—	—	67	—	481
Murray.....	—	—	—	—	—	—	—
Ottawa River.....	—	—	10,923	1,758	—	—	12,681
Rideau.....	—	—	—	—	—	—	—
Trent.....	—	—	64	—	—	—	64
St. Andrew's.....	1,415	—	1,403	39	150	—	3,007
Canso.....	204,671	265,703	841,480	—	33,433	—	1,345,287
<b>Totals, 1964....</b>	<b>34,119,845</b>	<b>45,060,681</b>	<b>11,852,577</b>	<b>641,092</b>	<b>235,885</b>	<b>1,366,770</b>	<b>93,276,550</b>
<b>1965</b>							
Sault Ste. Marie.....	284,419	198,784	492,941	719	26,814	403,232	1,406,909
Welland.....	17,203,075	28,494,441	6,889,171	271,440	69,379	506,090	53,436,596
St. Lawrence River.....	16,963,752	17,378,975	7,947,911	353,093	126,090	608,842	43,378,663
Richelieu River.....	—	—	87,259	482	—	—	87,741
St. Peter's.....	524	12	—	15	—	—	551
Murray.....	—	—	—	—	—	—	—
Ottawa River.....	—	—	—	615	—	—	615
Rideau.....	—	—	—	—	—	—	—
Trent.....	—	—	13	—	—	—	13
St. Andrew's.....	792	106	501	155	70	—	1,624
Canso.....	191,265	222,161	644,399	13	24,567	—	1,082,405
<b>Totals, 1965....</b>	<b>34,646,827</b>	<b>46,294,479</b>	<b>16,062,195</b>	<b>626,532</b>	<b>246,920</b>	<b>1,518,164</b>	<b>99,395,117</b>

<sup>1</sup> Standard commodity classification.

### 11.—Freight Traffic through Canadian Canals, by Direction and Origin, Navigation Season 1965

NOTE.—Figures include duplications where cargoes pass through two or more canals.

Canal	Traffic by Direction		Origins of Cargo			Total Cargo
	Up	Down	Canada	United States	Other Countries	
	tons	tons	tons	tons	tons	tons
Sault Ste. Marie.....	543,272	863,637	1,280,668	113,832	12,409	1,406,909
Welland.....	19,974,126	33,462,470	26,598,216	22,893,379	3,945,001	53,436,596
St. Lawrence River.....	22,174,727	21,203,936	26,996,034	10,707,038	5,675,591	43,378,663
Richelieu River.....	82,951	4,790	87,741	—	—	87,741
St. Peter's.....	344	207	551	—	—	551
Murray.....	—	—	—	—	—	—
Ottawa River.....	110	505	615	—	—	615
Rideau.....	—	—	—	—	—	—
Trent.....	10	3	13	—	—	13
St. Andrew's.....	571	1,053	1,624	—	—	1,624
Canso.....	708,352	374,053	1,043,410	32,675	6,320	1,082,405
<b>Totals.....</b>	<b>43,484,463</b>	<b>55,910,654</b>	<b>56,008,872</b>	<b>33,746,924</b>	<b>9,639,321</b>	<b>99,395,117</b>

## 12.—St. Lawrence-Great Lakes Traffic using St. Lawrence, Welland and Sault Ste. Marie Canals, 1964 and 1965

NOTE.—Duplications eliminated wherever possible.

Canals Used	1964 <sup>a</sup>			1965		
	Upbound Freight	Downbound Freight	Total	Upbound Freight	Downbound Freight	Total
	tons	tons	tons	tons	tons	tons
<b>Traffic using Canadian St. Lawrence-Great Lakes System.....</b>	<b>21,837,865</b>	<b>34,891,332</b>	<b>56,729,197</b>	<b>25,134,325</b>	<b>35,737,766</b>	<b>60,872,091</b>
St. Lawrence and Ottawa.....	—	—	—	4,264	—	4,264
St. Lawrence only.....	2,956,875	1,522,515	4,479,390	4,865,250	1,685,911	6,551,161
St. Lawrence and Welland.....	15,594,530	19,221,747	34,816,277	17,244,744	19,353,303	36,598,047
St. Lawrence, Welland and Sault Ste. Marie.....	24,203	31,318	55,521	60,469	164,722	225,191
Welland only.....	2,895,886	13,574,151	16,470,037	2,478,001	13,839,835	16,317,836
Welland and Sault Ste. Marie.....	41,996	32,398	74,394	194,664	108,897	303,561
Sault Ste. Marie.....	324,375	509,203	833,578	286,933	587,098	874,031
<b>Traffic using United States Locks at Sault Ste. Marie.....</b>	<b>10,928,447</b>	<b>82,988,582</b>	<b>93,917,029</b>	<b>11,415,468</b>	<b>82,770,873</b>	<b>94,186,341</b>
<b>Totals.....</b>	<b>32,766,312</b>	<b>117,879,914</b>	<b>150,646,226</b>	<b>36,549,793</b>	<b>118,508,639</b>	<b>155,058,432</b>

Since 1950, the traffic through the Sault Ste. Marie canal (Canadian lock and United States locks) has fluctuated between a high of 123,489,000 tons in 1953 and a low of 70,906,000 tons in 1959; the volume in 1965 was 95,593,250 tons. Throughout the period, the dominant traffic from a tonnage aspect continued to be iron ore, which also reached its highest point in 1953 at 98,658,000 tons, dropped to 47,214,000 tons in 1961 and stood at 65,029,589 tons in 1965. In 1958, wheat replaced soft coal in second place where it has remained, tonnages increasing from 7,478,000 to 11,223,342 during the 1958-65 period; during the same years, other grains usually ranged between 35 p.c. and 60 p.c. of the wheat tonnage, although they were only 28 p.c. of that tonnage in 1961 and 38 p.c. in 1965. Soft coal carried in the 1958-65 period ranged between 6,389,000 tons in 1958 and 7,948,389 tons in 1965.

**Canadian Use of the Panama Canal.**—The use of the Panama Canal as a transport facility for the movement of goods from one Canadian port to another is of relatively minor importance. Of the total of 5,291,000 long tons of cargo leaving the West Coast of Canada in the year ended June 30, 1965 and passing through the Panama Canal, only 9,000 long tons were destined for Eastern Canadian ports. Similarly, of the 969,000 long tons of cargo leaving Eastern Canadian ports and passing through the Panama Canal, 22,000 long tons were destined for Western Canadian ports. The total tonnage passing through the Panama Canal and arriving in Canadian West Coast ports from any origin, Canada or elsewhere, amounted to 865,493 long tons in the year ended June 30, 1965; the total from any origin arriving at Eastern Canadian ports after having passed through the Panama Canal was 476,734 long tons.

### Subsection 4.—The St. Lawrence Seaway

Events leading up to the beginning of the St. Lawrence Seaway project and the progress made during the years of its construction are covered in the 1954 to 1959 Year Books. A special article carried in the 1956 edition (pp. 821-829) gives detailed information on Great Lakes-St. Lawrence waterway traffic immediately prior to the beginning of construction on the project and another special article carried in the 1960 Year Book (pp. 851-860) covers the story of the Seaway, its new facilities and services and the movement of freight during the second year of its operation.

The St. Lawrence Seaway Authority, constituted as a Corporation by Act of Parliament in 1951 (RSC 1952, c. 242), undertook the construction (and subsequent maintenance and





The St. Lambert lock, where ocean-going vessels flying the flags of many nations begin their journey through the St. Lawrence Seaway and through which they pass again downbound on their way to the sea. The lock is located across from Montreal harbour and close to the site of Expo 67, some of the buildings of which are seen in the background.

operation) of Canadian facilities between Montreal and Lake Erie to allow 27-foot navigation, concurrently with the construction of similar facilities in the International Rapids Section of the St. Lawrence River by the Saint Lawrence Seaway Development Corporation of the United States. The Seaway was opened to commercial traffic on Apr. 1, 1959 and officially opened on June 26, 1959. With the opening of the Seaway certain ancillary canals were transferred to the jurisdiction of the St. Lawrence Seaway Authority for operation and maintenance purposes. These include the Lachine, a section of the Cornwall



Canal, a portion of the third Welland Canal and the Canadian locks at Sault Ste. Marie. Tolls are not assessed against vessel movements on these waterways and traffic data for them are not included in this Subsection.

Tables 13 and 14 give combined traffic statistics of the St. Lawrence and Welland Canals for the year 1965. Duplicate transits are eliminated so that the figures show the actual total movement of goods through the St. Lawrence Seaway. On this basis, 5,221 ships carrying nearly 24,796,000 tons of cargo moved upbound through the Seaway in 1965 and 5,337 vessels carrying 35,179,000 tons moved downbound. Ocean-going ships carried 23.0 p.c. of the total cargoes, lakers 76.9 p.c. and other craft 0.1 p.c. There is still evident an imbalance of loading, 33.4 p.c. of the gross registered tonnage of all vessels upbound being in ballast compared with only 23.7 p.c. of the vessels downbound. Of the total tonnage carried upbound in 1965, 19,029,000 tons were domestic cargo and 5,766,872 tons were foreign traffic; downbound, 27,408,000 tons were domestic freight and 7,771,506 tons were carried to and from foreign ports.

### 13.—Summary Statistics of St. Lawrence Seaway Traffic, 1965

(Combined traffic of the Montreal-Lake Ontario Section and the Welland Canal, with duplications eliminated)

Item	Upbound			Downbound		
	No. of Transits	Gross Tons	Cargo Tons	No. of Transits	Gross Tons	Cargo Tons
<b>Type of Vessel</b>						
Ocean—						
Cargo.....	1,256	7,747,767	5,091,392	1,256	7,767,818	7,120,385
Tanker.....	125	1,244,665	828,942	125	1,244,755	787,881
Laker—						
Cargo.....	2,661	21,325,013	16,537,207	2,719	21,713,518	26,417,538
Tug and barge.....	137	191,403	191,015	140	204,601	327,209
Tanker.....	553	1,655,538	2,144,706	564	1,673,636	521,406
Other craft <sup>1</sup> .....	489	182,630	2,696	533	180,192	4,611
<b>Totals.....</b>	<b>5,221</b>	<b>32,347,016</b>	<b>24,795,958</b>	<b>5,337</b>	<b>32,784,520</b>	<b>35,179,030</b>
<b>Type of Cargo</b>						
Bulk.....	2,002	13,997,631	19,571,305	3,101	23,951,463	32,285,219
General.....	866	5,052,386	3,867,806	101	476,315	124,832
Mixed.....	466	2,381,599	1,356,847	723	3,470,396	2,768,979
Passenger <sup>2</sup> .....	145	4,246	—	145	4,246	—
In Ballast—						
Ocean.....	162	1,363,239	—	107	941,710	—
Laker.....	1,248	9,375,833	—	786	3,775,461	—
Other.....	332	172,082	—	374	164,929	—
<b>Type of Traffic</b>						
Domestic—						
Canada to Canada.....	1,585	7,272,814	5,447,054	1,984	10,774,114	10,760,663
Canada to United States.....	1,895	15,758,019	13,269,139	21	136,398	70,231
United States to Canada.....	8	31,467	3,321	1,564	12,560,970	15,965,354
United States to United States...	395	641,429	309,672	424	590,991	611,276
Foreign—						
Canada—						
Import.....	246	1,596,808	1,028,528	—	—	—
Export.....	—	—	—	275	1,826,144	1,059,775
United States—						
Import.....	1,092	7,046,479	4,738,344	—	—	—
Export.....	—	—	—	1,069	6,895,903	6,711,731

<sup>1</sup> Includes naval vessels.  
4,267.

<sup>2</sup> Upbound passengers in all types of vessel numbered 3,960 and downbound

## 14.—St. Lawrence Seaway Traffic classified by Type of Cargo, 1965

(Combined traffic of the Montreal-Lake Ontario Section and the Welland Canal, with duplications eliminated)

Commodity	Cargo Tons	P.C. of Total	Commodity	Cargo Tons	P.C. of Total
<b>Agricultural Products</b> .....	<b>19,495,584</b>	<b>32.5</b>	<b>Forest Products</b> .....	<b>310,171</b>	<b>0.5</b>
Wheat.....	9,461,850	15.8	Pulpwood.....	214,138	0.4
Corn.....	3,895,033	6.5	Other forest products.....	96,033	0.2
Soybeans.....	1,778,664	3.0	<b>Manufactures and Miscellaneous</b> .....	<b>10,815,297</b>	<b>18.0</b>
Barley.....	1,548,509	2.6	Iron and steel, manufactured....	3,127,927	5.2
Oats.....	944,018	1.6	Fuel oil.....	2,616,239	4.4
Flaxseed.....	383,116	0.6	Newsprint.....	542,497	0.9
Soybean oil cake and meal.....	321,599	0.5	Gasoline.....	371,743	0.6
Flour, wheat.....	235,911	0.4	Food products.....	348,629	0.6
Beans and peas.....	221,674	0.4	Pig iron.....	321,545	0.5
Malt.....	97,846	0.2	Chemicals.....	245,841	0.4
Rye.....	87,513	0.1	Lubricating oil and grease.....	231,384	0.4
Other agricultural products.....	519,851	0.9	Sugar.....	193,702	0.3
<b>Animal Products</b> .....	<b>425,137</b>	<b>0.7</b>	Petroleum products, other.....	186,475	0.3
Packing house products, edible..	145,128	0.2	Cement.....	175,720	0.3
Hides, skins and pelts.....	86,613	0.1	Rubber, crude, natural, synthetic	151,693	0.3
Other animal products.....	193,396	0.3	Scrap iron and steel.....	147,265	0.2
<b>Mineral Products</b> .....	<b>28,025,423</b>	<b>46.7</b>	Sodium products.....	132,293	0.2
Iron ore.....	17,183,496	28.7	Iron and steel, nails, wire.....	116,764	0.2
Bituminous coal.....	7,778,202	13.0	Tar, pitch and creosote.....	106,947	0.2
Stone, ground or crushed.....	872,513	1.5	Syrup and molasses.....	91,974	0.2
Salt.....	632,917	1.1	Machinery and machines.....	88,903	0.1
Clay and bentonite.....	208,090	0.3	Other manufactures and miscel- laneous.....	1,617,666	2.7
Coke.....	207,658	0.3	<b>Package Freight</b> .....	<b>903,466</b>	<b>1.5</b>
Gravel and sand.....	161,873	0.3	Package freight—domestic.....	886,864	1.5
Petroleum, crude.....	130,548	0.2	Package freight—foreign.....	16,602	--
Aluminum ore and concentrates..	113,807	0.2	<b>Totals</b> .....	<b>59,974,988</b>	<b>100.0</b>
Other mineral products.....	736,319	1.2			

On the Montreal-Lake Ontario Section, upbound traffic increased 19.4 p.c. in 1965 over 1964 and downbound traffic 10.2 p.c. The former was accounted for almost entirely by the volume of iron ore shipped from St. Lawrence ports to Hamilton and Lake Erie, and the latter by overseas shipments of wheat. There were 251 more upbound transits and 300 more downbound transits in 1965 than in 1964, indicating a slight increase in the number of vessels using this portion of the Seaway. Bulk cargo comprised 87.1 p.c. of the total traffic through the Section in 1965, the principal commodities through the St. Lawrence canals being iron ore, wheat, corn, fuel oil, barley and bituminous coal. Traffic patterns show that 29.5 p.c. of the total movement was between two Canadian ports, 39.1 p.c. moved between Canadian and United States ports and 31.1 p.c. consisted of foreign trade to and from Canada and the United States. The small remainder was traffic between two ports in the United States.

There were 8,384 transits through the Welland Canal in 1965, with a cargo volume of 19,949,000 tons upbound and 33,472,000 tons downbound; bulk cargo accounted for 91.2 p.c. of the traffic. Although many vessels pass through both the St. Lawrence and the Welland Canals on "through" trips, there is a substantial amount of local traffic between Great Lakes ports which involves only the Welland Canal. These movements are largely of iron ore, grain and coal. The Welland Canal traffic was 10,073,000 cargo tons greater than that reported for the Montreal-Lake Ontario Section.

Income of the St. Lawrence Seaway Authority for 1965 amounted to \$16,848,181, comprising toll revenue of \$15,480,631 assessed for transits through the Seaway locks between Montreal and Lake Ontario and sundry revenues (rentals, wharfage, bridge revenue, etc.) of \$1,367,550. Total expenses for 1965 amounted to \$12,414,128, of which operation and maintenance expenses amounted to \$10,472,700 and regional headquarters, headquarters administration and engineering expenses amounted to \$3,468,899, less an allocation to non-toll canals of \$369,761 and to construction cost of \$1,157,710.

Pleasure craft locked through the Montreal-Lake Ontario Section canals numbered 353 upbound and 420 downbound in 1965, and those locked through the Welland Canal numbered 143 upbound and 145 downbound.

### Subsection 5.—Marine Services of the Federal Government

The services covered in this Subsection deal with the Canadian Coast Guard and aids to navigation, including the maintenance of the St. Lawrence River Ship Channel, steamship inspection and pilotage service.

**Canadian Coast Guard.**—The Canadian Coast Guard, known by that name only since January 1962, has played a vital part in Canada's maritime economic and industrial development since Confederation. At that time several previously established government marine organizations were brought together as a single marine service, founding the fleet that became the responsibility of the Department of Transport when it was established in 1936.

From a small beginning, the fleet has expanded into an organization consisting of more than 200 vessels of all types, of which nearly 50 are of a larger size. Of these, 31 measure more than 1,000 tons gross. They include 10 fully strengthened icebreakers and eight lighthouse supply-and-buoy ships with icebreaking capabilities. These vessels comprise in numbers the world's second largest icebreaking force. The greater part of the fleet's expansion has occurred within the past few years to meet a new and fast-growing requirement for icebreaker support of shipping activities in the Canadian Arctic during the summer and for commercial shipping in the Gulf of St. Lawrence in the winter. The Department's concern with marine search-and-rescue activities has also increased, not only in the field of commercial shipping but also in connection with the mushrooming public interest in pleasure boating with its attendant safety problems.

The duties of the Canadian Coast Guard are civilian in nature and no armaments are carried on the ships. It maintains and supplies shore-based and floating aids to navigation in Canadian waters, including the Atlantic and Pacific coastal areas, the St. Lawrence River and Great Lakes, the channels of both the eastern and western Arctic, Hudson Bay, the Mackenzie River system and other inland waters. The territory covered is vast and the duties involved are extensive.

Since its beginning, the fleet has carried out icebreaking as one of its important undertakings. In its earliest years, such work was done mainly to aid shipping in eastern port areas and in the St. Lawrence for whatever winter period was allowed by weather conditions and the limitations of ships of that area. Icebreaking has also been carried out through the years at Montreal to prevent floods caused by ice jams in the river. When the development of the sea route from Churchill, Man., to Europe became a factor in the country's maritime economy, icebreaker assistance was extended to commercial shipping using that route. Since 1954, as a result of the opening up of the Canadian Arctic, the Department has handled all icebreaking requirements in these waters, extending to within a few hundred miles of the North Pole.

Arctic operations necessitate ice reconnaissance services, which are carried out by fixed wing aircraft flying out of such ports as Churchill, Man., and Frobisher Bay and Resolute Bay in the High Arctic. These flights are under the direction of the Department's Meteorological Branch and provide information on ice conditions in the sea lanes in all areas where the convoys operate. Helicopters, based aboard the icebreakers, are used for close-range reconnaissance. They carry trained observers provided by the Meteorological Branch and their ability to spot leads through the ice, which cannot be seen from the ship, has resulted in tremendous savings in time for the convoys. The helicopters are also very useful for ship-to-shore personnel movements and for carrying light freight. As an indication of the growth of Arctic re-supply operations handled by the Canadian Coast Guard, the cargo handled, which was approximately 8,000 tons in 1954, had increased to 100,000 tons in 1965.



A Canadian Coast Guard Officer Training College, established in 1965 by the Department of Transport at Sydney, N.S., will provide a four-year course for students who will graduate with certificates as either Marine Engineer, First Class, or Master Mariner. The first class comprised forty cadets from all across Canada.

**Aids to Navigation.**—The Canadian system of aids to navigation is similar to that of other North American countries. Such aids maintained by the Department of Transport for Canadian and contiguous waters consist of buoys, lightships, lighthouses, day beacons, radio beacons and two electronic networks operating on the hyperbolic principle—Loran and Decca. The numbers of danger signals maintained during the years ended Mar. 31, 1965 and 1966 were:—

<i>Type of Signal</i>	<i>1964-65</i>	<i>1965-66</i>	<i>Type of Signal</i>	<i>1964-65</i>	<i>1965-66</i>
	No.	No.		No.	No.
Lights.....	3,447	3,536	Lighted and combination lighted whistling and bell buoys.....	1,582	1,675
Lightships.....	2	2	Unlighted bell and whis- tling buoys.....	43	20
Light-keepers.....	915	895	Electronic signals.....	—	22
Fog whistles and sirens...	54	59	Unlighted beacons and buoys.....	12,786	13,037
Diaphones and tyfons....	271	273			
Mechanical bells and gongs	10	10			
Hand fog horns and bells.	81	66			

All aids incorporating light or sound devices are listed in the Department of Transport annual publication *List of Lights and Fog Signals*. Information on the radio beacons and on Loran and Decca is published in *Radio Aids to Marine Navigation*.

Navigable waters have been improved greatly by dredging in channels and harbours, by the removal of obstructions, and by the building of remedial works to maintain or control water levels. Incidental to these developments of navigable waters are works to guard shorelines and prevent erosion, and for the control of roads and bridges that cross navigable channels. Icebreaking operations are continuous throughout the winter.

**St. Lawrence Ship Channel.**—This channel extends from about 40 miles below Quebec City to the foot of the Lachine Canal at Montreal, a distance of 200 miles. About 130 miles of this distance is dredged channel.

Above Quebec the channel has a limiting depth of 35 feet at extreme low water and a minimum width of 550 feet, with additional width up to 1,500 feet at all curves and difficult points, and additional anchorage and turning areas. Widening of the channel to a minimum width of 800 feet, commenced in 1952, is about 69 p.c. completed. This section comprises about 115 miles of dredged channel. Below Quebec the limiting depth of dredged channel, about 15 miles in length, is 30 feet at low tide, with a width of 1,000 feet. An average tidal range of 15 feet in this area provides ample depth for any vessel using the St. Lawrence route. Above Quebec, maintenance requirements as a result of silting in this dredged channel are relatively minor but below the city silting is more pronounced because of tidal action.

The ship channel is well defined by buoys and the centre marked by range lights, permitting uninterrupted day and night navigation throughout the open season from about mid-April to early December. The movements of all shipping, weather and ice conditions and obstructions to traffic throughout the St. Lawrence waterway from Fame Point, Que., to Kingston, Ont., are recorded and made available to all concerned through a series of reporting stations known as the Marine Reporting Service.

**Steamship Inspection.**—The Steamship Inspection Service was established by authority of the Canada Shipping Act. Its functions include the formulation and subsequent enforcement of regulations concerned with the approval of design of hulls, machinery and equipment of ships; inspection during construction; periodic inspection and the issue

of inspection certificates; the assignment of load lines; the conditions under which dangerous goods may be carried in ships; the protection against accident of workers employed in loading and unloading ships; the prevention from pollution of Canadian territorial waters by oil from ships; control of pollution of the atmosphere by smoke emitted by ships; control of the powering, equipment and load limits of small vessels; and the certification of marine engineers. The Board also prepares correspondence courses in marine engineering for use in Marine Engineering Schools now controlled by the Department of Labour.

The Chairman and the Board of Steamship Inspection are located at Ottawa and field offices are maintained in the principal ocean and inland ports. A total of 1,872 vessels of Canadian ownership or registry, including 502 passenger ships, 144 new ships built in Canada, 37 ships built outside Canada for registry in Canada, 27 converted or reconditioned ships and 51 vessels registered or owned elsewhere, were inspected during the year ended Mar. 31, 1966.

**Pilotage.**—Pilotage service functions under the provisions of Part VI and Part VIA of the Canada Shipping Act. Wherever a pilotage district has been created by the Governor in Council, qualified pilots are licensed by the pilotage authority of the district. There are in Canada 22 pilotage districts, in nine of which the Minister of Transport is the pilotage authority (see Table 15); in each of the other districts the authority is a local body appointed by the Governor in Council. There are also three districts that are administered jointly by Canada and the United States.

**15.—Pilotage Service, by Pilotage District, 1964 and 1965**

District	1964		1965	
	Pilotage Trips	Net Registered Tonnage	Pilotage Trips	Net Registered Tonnage
	No.		No.	
Bras d'Or Lakes, N.S.....	336	624,472	357	676,883
Sydney, N.S.....	1,716	6,214,466	1,885	7,982,780
Halifax, N.S.....	3,760	15,965,172	3,708	16,320,782
Saint John, N.B.....	1,417	5,925,320	1,447	5,975,187
Quebec, Que.....	8,191	41,726,354	8,578	45,520,351
Montreal, Que.....	10,321	42,735,994	9,635	46,405,717
Cornwall, Ont.....	2,724	9,924,893	3,022	—
Churchill, Man.....	118	705,515	119	768,751
British Columbia.....	9,058	37,618,095	9,115	37,410,635
<b>Totals.....</b>	<b>37,641</b>	<b>161,440,281</b>	<b>37,866</b>	<b>161,061,086</b>

## Section 2.—Financial Statistics of Waterways

The principal statistics available on the cost of facilities for water-borne traffic consist of the record of public expenditure on waterways. Such expenditure may be classified as capital expenditure, or investment and expenditure for maintenance and operation. Revenue from operation is also recorded. The major part of the capital expenditure for the permanent improvement of waterways is provided by the Federal Government, that by municipalities and private industry being confined almost entirely to terminal or dockage facilities.

The figures available of federal capital expenditure on waterways are contained in the *Public Accounts* and the annual reports of the Departments of Transport, Public Works and Finance and in the annual report of the St. Lawrence Seaway Authority. However,

for several reasons, these figures cannot be regarded as an accurate indication of the present worth of the undertakings represented and therefore are not included here; the one exception is the capital expenditure made by the National Harbours Board on facilities under its jurisdiction. The capital values of the fixed assets administered by the Board at Dec. 31, 1965 amounted to \$446,143,009; this figure includes expenditure on all buildings, machinery and durable plant improvements less deductions for depreciation and the scrapping or abandonment of plant, and therefore represents a fair approximation of the present value of the properties. The total amount advanced by the Federal Government to the National Harbours Board for capital expenditure during 1965 was \$3,894,186, distributed as follows: Quebec, Que., \$747,467; and Champlain Bridge (Montreal), \$3,146,719.

**Waterways Expenditure and Revenue.**—Expenditure under this heading (Tables 16 to 18) is mainly for the operation and maintenance of various facilities for water transport but, unfortunately, the line between operation and maintenance expenditure is not as finely drawn as is desirable. Revenue in connection with waterways of the Department of Transport, the Department of Public Works and the St. Lawrence Seaway Authority is shown in Table 19.

To facilitate water transportation, the Federal Government expends annually, in addition to the recurrent expenditure shown here, a considerable amount to cover deficits of the National Harbours Board, and for mail subsidies and steamship subventions as shown in Table 21. Operating revenue and expenditure of facilities administered by the National Harbours Board are shown separately in Table 20.

**16.—Department of Transport Expenditures on Marine Service, Years Ended Mar. 31, 1964 and 1965**

Service	1964	1965
	\$	\$
Administration, including agencies.....	1,186,059	1,269,740
Marine Works Branch—		
Aids to Navigation Division—		
Administration, operation and maintenance.....	6,978,572	7,207,822
Construction.....	5,648,701	3,700,880
Canals Division—		
Administration, operation and maintenance.....	2,544,425	2,565,616
Construction.....	1,803,092	4,431,647
Marine Hydraulics Branch—		
Ship Channel Service—		
Administration, operation and maintenance of St. Lawrence and Saguenay Rivers.....	1,101,607	1,341,079
Marine Regulations Branch—		
Steamship Inspection Division.....	1,180,505	1,623,932
Nautical and Pilotage Division—		
Nautical Services.....	424,407	447,055
Pilotage Services—		
Administration, operation and maintenance.....	1,516,016	1,608,322
Pensions to former pilots.....	1,200	1,200
Marine reporting service.....	124,841	128,162
Payment to Newfoundland re Pilotage Commission.....	8,451	—
Construction.....	193,423	594,502
Marine Operations Branch—		
Administration, operation and maintenance.....	23,250,529	23,147,992
St. Lawrence Seaway Authority—		
Operating deficit and capital requirements of canals and works entrusted to the St. Lawrence Seaway Authority.....	2,883,620	1,867,006
<b>Totals.....</b>	<b>48,845,448</b>	<b>49,934,955</b>



# 17.—Department of Public Works Expenditure on Waterways (Harbours, Rivers, Roads and Bridges), Years Ended Mar. 31, 1964 and 1965

NOTE.—Compiled from the annual reports of the Department concerned by the Comptroller of the Treasury, Department of Finance. Excludes expenditures on harbours administered by the National Harbours Board as shown in Table 20.

Year and Province or Territory	Dredging <sup>1</sup>	Con- struction	Improve- ments and Repairs	Staff and Sundries	Total
	\$	\$	\$	\$	\$
<b>1964</b>					
Newfoundland.....	531,156	4,030,792	579,181	270,660	5,411,789
Prince Edward Island.....	444,071	361,829	237,655	9,554	1,053,109
Nova Scotia.....	440,450	1,564,427	423,074	429	2,428,380
New Brunswick.....	1,151,948	1,024,046	236,708	8,874	2,421,576
Quebec.....	384,715	3,176,395	902,937	335,980	4,800,027
Ontario.....	485,342	2,520,184	432,330	49,371	3,487,227
Manitoba.....	250,712	747	64,316	50,670	366,445
Saskatchewan.....	—	66,494	5,285	—	71,779
Alberta.....	280,799	7,397	12,485	29,962	330,643
British Columbia.....	1,309,261	1,307,109	390,343	227,038	3,233,751
Yukon and Northwest Territories.....	—	48,889	50,189	—	99,078
<b>Canada, 1964.....</b>	<b>5,278,454</b>	<b>14,108,309</b>	<b>3,334,503</b>	<b>982,538</b>	<b>23,703,804</b>
	Dredging <sup>1</sup>	Construc- tion and Im- provements	Repairs and Upkeep	Staff and Sundries	Total
	\$	\$	\$	\$	\$
<b>1965</b>					
Newfoundland.....	309,356	4,132,250	658,205	377,458	5,477,269
Prince Edward Island.....	305,444	421,935	255,299	36,504	1,019,182
Nova Scotia.....	102,059	2,536,559	748,742	124	3,387,484
New Brunswick.....	198,424	2,388,239	315,220	2,232	2,904,115
Quebec.....	315,852	5,390,418	958,957	355,565	7,020,792
Ontario.....	2,061	4,494,422	391,785	38,807	4,927,075
Manitoba.....	237,709	124,925	41,778	152,350	556,762
Saskatchewan.....	—	41,823	7,067	96,110	145,000
Alberta.....	264,035	6,456	40,633	—	311,124
British Columbia.....	758,777	2,952,444	370,043	293,591	4,374,855
Yukon and Northwest Territories.....	—	79,138	—	—	79,138
<b>Canada, 1965.....</b>	<b>2,493,717</b>	<b>22,568,609</b>	<b>3,787,729</b>	<b>1,352,741</b>	<b>30,202,796</b>

<sup>1</sup> Includes expenditures for dredging plants.

# 18.—St. Lawrence Seaway Authority Expenditures, 1964 and 1965

Item	1964	1965
	\$	\$
<b>Administration—</b>		
Headquarters.....	1,273,556	1,348,237
Regional.....	741,209	960,515
Engineering.....	833,103	1,160,147
<b>Operation and Maintenance—</b>		
Salaries and wages.....	4,272,947	4,779,185
Employee benefits.....	419,674	420,253
Maintenance materials and services.....	2,262,846	3,714,987
Grants in lieu of municipal taxes.....	366,666	434,405
Other operation and maintenance expenses.....	573,039	999,291
<b>Totals.....</b>	<b>10,743,040</b>	<b>13,817,020</b>

### 19.—Federal Government Revenue in connection with Waterways, Years Ended Mar. 31, 1964 and 1965

NOTE.—Compiled from annual reports of the Department of Transport, the *Public Accounts* and the annual reports of the St. Lawrence Seaway Authority.

Department and Item	1964	1965	Department and Item	1964	1965
	\$	\$		\$	\$
<b>Department of Transport</b>			<b>Department of Public Works</b>		
<b>Marine Services.....</b>	<b>6,538,235</b>	<b>8,763,137</b>	<b>Earnings of Dry Docks.....</b>	<b>463,816</b>	<b>465,965</b>
Canals.....	384,086	415,557	Champlain Dock, Lauzon.....	258,956	225,470
Fines and forfeitures.....	2,128	2,283	Lorne Dock, Lauzon.....	67,905	51,255
Steamship inspection.....	242,554	205,548	Esquimalt new dock.....	134,360	185,815
Wharf revenue.....	922,446	1,464,558	Selkirk repair slip.....	2,595	3,425
Harbour dues.....	332,104	398,733			
Measuring surveyor's fees.....	1,396	2,481	<b>Works and Plants Leased.....</b>	<b>46,344</b>	<b>77,339</b>
Examinations—masters' and mates' fees.....	13,936	15,803	Kingston dry dock.....	12,100	12,100
Pilots' licence fees (pilotage).....	580	580	Ferry privileges.....	476	351
Pilot boat fees.....	594,231	633,237	Dredges and plants.....	33,768	64,888
Shipping fees.....	253,400	274,550	Rents from water lots, etc.....	73,281	62,287
Marine steamer earnings.....	12,124	11,429	Refunds of expenditure reported in previous years.....	215,210	547,893
Rentals—water lots and light-house sites.....	52,076	59,088	Sundry receipts, test borings, etc.	4,167	3,584
Sale of land, buildings, etc.....	26,994	92,306			
Merchant seamen's identity certificates.....	686	623	<b>Totals, Department of Public Works.....</b>	<b>802,818</b>	<b>1,157,068</b>
Miscellaneous.....	114,843	130,785			
Refunds, previous year's expenditures.....	39,612	95,385	<b>St. Lawrence Seaway Authority</b>	Calendar Year	Calendar Year
Port warden fees.....	75,473	76,915	Tolls assessed.....	13,544,436	15,450,631
<b>Board of Transport Commissioners.....</b>	<b>2,271</b>	<b>3,153</b>	Rentals.....	476,550	587,214
			Wharfage.....	248,052	156,585
<b>Totals, Department of Transport.....</b>	<b>6,540,506</b>	<b>8,766,290</b>	Miscellaneous.....	781,069	643,751
			<b>Totals, St. Lawrence Seaway Authority.....</b>	<b>15,050,107</b>	<b>16,848,181</b>

### 20.—Operating Revenue and Expenditure of Harbours, Elevators and Bridges under the National Harbours Board, 1964 and 1965

Harbour and Year	Operating Revenue	Operating Expenditure	Net Operating Income	Harbour and Year	Operating Revenue	Operating Expenditure	Net Operating Income
	\$	\$	\$		\$	\$	\$
<b>St. John's, Nfld.—</b>				<b>Jacques Cartier Bridge (Montreal)—</b>			
1965 <sup>1</sup> .....	247,574	106,208	141,366	1964.....	158,974	294,129	—135,155
<b>Halifax—</b>				1965.....	129,084	362,070	—232,986
1964.....	2,608,074	2,153,383	454,691	<b>Champlain Bridge (Montreal)—</b>			
1965.....	2,650,613	2,381,401	269,212	1964.....	624,879	407,889	216,990
<b>Saint John—</b>				1965.....	990,976	454,251	536,725
1964.....	1,066,583	910,410	156,173	<b>Prescott Elevator—</b>			
1965.....	1,186,522	1,071,274	115,248	1964.....	779,973	429,017	350,956
<b>Chicoutimi—</b>				1965.....	951,824	479,708	472,116
1964.....	154,353	34,450	119,903	<b>Port Colborne Elevator—</b>			
1965.....	167,617	46,625	120,992	1964.....	405,026	288,817	116,209
<b>Quebec—</b>				1965.....	376,810	279,135	97,675
1964.....	3,452,081	2,278,162	1,173,919	<b>Churchill—</b>			
1965.....	4,202,845	2,957,283	1,245,562	1964.....	1,401,910	1,111,659	290,251
<b>Trois-Rivières—</b>				1965.....	1,499,131	1,149,813	349,318
1964.....	841,544	132,041	709,503	<b>Vancouver—</b>			
1965.....	990,646	182,201	808,445	1964.....	5,775,124	3,404,860	2,370,264
<b>Montreal—</b>				1965.....	5,935,367	3,664,389	2,270,978
1964.....	13,617,423	8,510,669	5,106,754				
1965.....	15,880,480	8,794,855	7,085,625				

<sup>1</sup> First year of operation under National Harbours Board.

**Shipping Subsidies.**—Table 21 shows the net amount of steamship subventions paid in connection with contracts made for the maintenance of essential coastal and inland water shipping services. The payment of these subventions is administered by the Canadian Maritime Commission under statutory authority.

**21.—Steamship Subventions, Years Ended Mar. 31, 1965 and 1966**

Services	1965	1966
	\$	\$
<b>Western Local Services—</b>		
Gold River and Zeballos, B.C.....	24,000	24,000
Vancouver and northern British Columbia ports, B.C.....	300,000	300,000
Vancouver and west coast of Vancouver Island, B.C.....	88,000	88,000
<b>Eastern Local Services—</b>		
Dalhousie, N.B., and Miguasha, Que.....	37,500	27,523
Grand Manan and the mainland, N.B.....	112,700	239,500
Halifax, N.S., and St. John's, Nfld.....	116,274	201,373
Île aux Grues and Montmagny, Que.....	33,000	33,000
Île aux Coudres and Les Eboulements, Que.....	6,500	6,500
Île aux Grues and Montmagny, Que. (summer).....	1,700	1,700
Île aux Grues and Montmagny, Que. (winter).....	32,566	34,436
Îles de la Madeleine, Que., Cheticamp and Halifax, N.S.....	84,566	100,000
Îles de la Madeleine and Montreal, Que.....	1	1
Matane and Godbout, Que.....	52,400	52,400
Mulgrave and Canso, N.S.....	31,250	31,250
Mulgrave, Queensport and Isle Madame, N.S.....	157,000	157,000
Owen Sound and ports on Manitoulin Island and Georgian Bay, Ont.....	78,695	78,695
Pelée Island and the mainland, Ont.....	294,000	278,000
Pictou, N.S., Charlottetown, Souris, P.E.I., and Îles de la Madeleine, Que.....	275,869	273,307
Portugal Cove and Bell Island, Nfld.....	84,500	82,900
Prince Edward Island and Newfoundland.....	42,500	42,500
Prince Edward Island and north shore of St. Lawrence River, Que.....	748,882	816,320
Prince Edward Island and Nova Scotia.....	430,000	430,000
Quebec, Natashquan and Blanc Sablon, Que.....	290,000	290,000
Rimouski and north shore ports to Blanc Sablon, Que.....	21,000	21,000
Rivière du Loup and St. Siméon, Que.....	50,000	50,000
Ste. Anne des Monts and Sept Îles, Que.....	38,000	—
Saint John, N.B., Westport, Tiverton, Freeport and Yarmouth, N.S.....	3,500	3,500
Saint John and White Head Island, N.B.....	43,000	43,000
St. Lawrence River and Gaspé ports to Chandler, Que.....	43,000	43,000
Sorel and Île St. Ignace, Que.....	42,500	—
Sydney and Bay St. Lawrence, N.S.....	5,000	5,000
Trois Pistoles and Les Escoumins, Que.....	10,875	50,656
Twillingate and New World Island, Nfld.....	8,235	10,650
Yarmouth, N.S., and Rockland, Maine, U.S.A.....	4,647,287	5,550,063
Newfoundland Coastal Steamship Services.....		
<b>Totals.....</b>	<b>8,234,299</b>	<b>9,365,273</b>

<sup>1</sup> Recaptured.

## PART V.—CIVIL AIR TRANSPORT

### AN OUTLINE OF THE DEVELOPMENT OF CIVIL AIR TRANSPORT IN CANADA\*

Canada achieved distinction in pioneering early flight when, in 1907, Dr. Alexander Graham Bell formed the Aerial Experimental Association at Baddeck in Nova Scotia, the objective of which was to build "a practical aerodrome or flying machine driven through the air by its own power and carrying a man". This was accomplished when F. W. Baldwin became the first Canadian and the first member of the British Empire to fly a heavier-than-air machine when he flew at Hammondsport, New York, in April 1908. Another member of the Association, J. A. D. McCurdy, was the first man to fly in Canada when, on Feb. 23, 1909, he flew the famous Silver Dart, which he had been instrumental in building, for half a mile from the ice of Baddeck Bay. Unfortunately, these splendid beginnings produced

\* Prepared by J. R. K. Main, former Director of Civil Aviation, Department of Transport, Ottawa.



no immediate results in Canada. Even throughout World War I there was little improvement in the official attitude toward flying, although Canadians by the thousands joined the Royal Flying Corps, the Royal Naval Air Service and, later, the Royal Air Force, where they covered themselves with glory. During 1914-18, nearly a thousand airmen were trained in Canada for service overseas and parts for some 2,900 training aircraft were built in Toronto. But these activities, although receiving some Canadian official support, were primarily under British direction and, at the end of hostilities, training was discontinued and manufacturing of aircraft parts ceased.

However, many of the thousands of aviators returning from overseas, who were determined to fly, bought war-surplus aircraft and started careers in civil flying with glowing enthusiasm but little success. Indeed it was not until about 1925 that the aeroplane had established a firm place in the Canadian economy in such fields as forest protection and aerial photographs. Many other countries were developing inter-city airmail services but Canada, possessing a surplus of railways, deliberately pursued a policy of encouraging the *natural* use of the aeroplane and neglecting the development of inter-urban services.

The policy had compensating features. The "bush" pilots, flying small aircraft equipped with skis or pontoons into the hinterland with little or no navigational assistance, did a mammoth job in contributing to the development of many great mining projects. So great were their accomplishments that, by 1929, they carried as much air freight as was carried by air in any country of the world and, in addition, delivered large volumes of mail to outlying communities. Even during the depression of the 1930s, bush or non-scheduled flying continued to expand, much of it accounted for by activity in gold mining, which had been encouraged by the increase in the price of gold from \$22 to \$35 an ounce. In 1930, 100 licensed carriers were doing business and by 1936 the number had increased to 130. Many of these were small operations but one—Canadian Airways Ltd. with headquarters in Winnipeg, which had amalgamated with several of the larger carriers in 1929-30—offered its services in every part of Canada. The Canadian National and Canadian Pacific Railways held equal shares in Canadian Airways and the expectation was that this company would operate the transcontinental airmail services when such a course of action should become feasible.

Inter-city airmail services in both Eastern Canada and the Prairie Provinces were started in 1930 but economies imposed by the great depression closed these services down in 1932. However, year by year during the depression, the Federal Government had been building and improving airports, installing aids to navigation, training and expanding meteorological services and improving radio and other communication systems until, by 1937, it was practicable to start an inter-city, day-and-night, all-weather service operating on schedule.

During the immediate prewar and early World War II years, several far-reaching changes took place in aviation on the domestic front. Having learned by experience the folly of permitting uncontrolled expansion in the field of rail transport, the Government was determined to sponsor only one major airline company to operate transcontinental and international services and, since the company so favoured would exercise a virtual monopoly in its particular field, the Government was also determined not to permit complete control to pass into private hands. Negotiations along these lines proved unsatisfactory to Canadian Airways Ltd. and to the Canadian Pacific Railway, and steps were taken to create a new company to operate the transcontinental services.

The Department of Transport Act, passed by Parliament in 1936, took the administration of civil aviation away from the Department of National Defence and placed it in the hands of the newly formed Department of Transport. The following year, the Trans-Canada Air Lines Act became law, making provision for the creation of an instrument to operate inter-urban airmail and passenger services to meet both domestic and international requirements. Trans-Canada Air Lines (TCA), as a Government-owned company, was organized with Canadian National Railways the sole shareholder and the new company became Canada's "chosen instrument" in the field of civil aviation.

TCA survey flights began in July 1937 and a scheduled service between Vancouver and Seattle was taken over from Canadian Airways in September of that year. Thereafter, expansion was rapid. An airmail and express service between Lethbridge and Edmonton was started early in 1938; a similar service between Montreal, Ottawa, Toronto, Winnipeg and Vancouver was in operation by December of the same year and in April 1939 a full-scale mail and passenger service from Montreal to Vancouver was inaugurated; in November 1939 a mail service on an experimental basis was extended to Moncton and by February 1940 this, too, was open to passenger traffic; and in August 1940 a full-scale service between Toronto and Windsor by way of London was in operation. International services followed in quick succession—Toronto to New York in May 1941; and Gander to St. John's, Nfld., by way of Moncton, N.B., and Sydney, N.S., in May 1942. Thus, in a period of less than four years, Canada was possessed of a transcontinental day-and-night, all-weather mail and passenger service connecting all its principal cities.

In the meantime, World War II was effecting many changes in Canadian civil aviation. The British Commonwealth Air Training Plan, which was established in Canada in 1939 to train aircrews from every part of the Commonwealth, graduated more than 131,000 personnel before the end of hostilities. This entailed the building or expanding and equipping of some 270 airports and also the setting up of a vast training and administrative organization. A transatlantic ferry service was inaugurated in 1940, funnelling bombers from St. Hubert, and later Dorval, in Quebec through Gander and Goose, Newfoundland, to Britain. Before the end of hostilities, more than 35,000 aircraft had spanned the gap between the two continents and flying the Atlantic had become commonplace.

In January 1942, the Canadian Pacific Railway actively entered the aviation field by buying up ten of the largest private air carriers and incorporating them into one company under the name of Canadian Pacific Airlines (CPA). The new company, for the time being, continued to serve the outlying areas, as had been done by the private companies, and to provide a complementary feeder service to TCA.

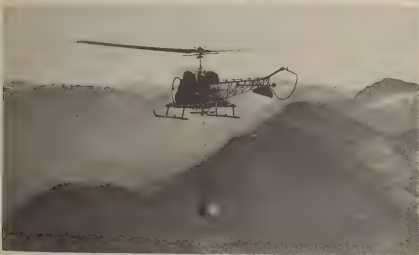
In August 1942, TCA added to its duties by taking over the operation of the Canadian Government Trans-Atlantic Air Service on behalf of the Department of Transport. This Service was originally conceived as a wartime measure only, for the purpose of carrying mail to Canadian troops in Europe, although it later evolved into the TCA Trans-Atlantic Service.

By 1944, aviation was playing such a vital part in the Canadian economy that it was necessary to set up a new administrative body—the Air Transport Board—to rationalize its expansion with special regard to public convenience and necessity, rates and tariffs, and the financial aspects of airline operations. The Board of Transport Commissioners had previously performed a somewhat similar function but it was considered advisable to place the affairs of aviation in the hands of a body dedicated solely to that purpose. Questions relating to safety of operation were left in the hands of the Department of Transport. These procedures brought Canada's regulations into line with those in vogue in the most advanced countries in the world, for the country had assumed an almost embarrassing prominent position in world aviation.

At the end of the War, Canada held the fourth world place in aviation, being superseded only by the United States, the U.S.S.R. and Britain. In recognition of this fact, Montreal was selected as the seat of the permanent Headquarters of the International Civil Aviation Organization (ICAO) established by the International Aviation Convention held in Chicago in December 1944: also, ICAO's sister organization, the International Air Transport Association (IATA) which represents all the major world airlines, set up headquarters in Montreal. The latter company was incorporated by a special Act of the Canadian Parliament on Dec. 18, 1945; the status of ICAO was, of course, established by treaty.



The use of company or private aircraft has become quite commonplace for the business executive for whom time is money.



Because of rugged terrain and inaccessibility, the helicopter is of greater value in Canada for the transport of goods and personnel than anywhere else in the world.



The first no-reservations-required AirBus service in Canada operates daily between Edmonton and Calgary.

A private aircraft hangar at Cartierville, about 1932; the Cartierville airport, which is close to Montreal Airport, is now by far the busiest in Canada in the handling of non-scheduled passenger and cargo flights, training aircraft, test flights, etc.



Toronto International Airport leads in the handling of international aircraft movements but is second to Montreal Airport in total aircraft movements, including scheduled and non-scheduled domestic and international flights.

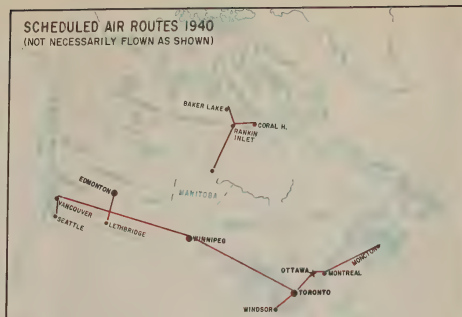
Photos by:

Air Canada  
National Aviation Museum  
Archives of Canada  
National Film Board  
Canadian Aviation, Toronto  
Northern Helicopters Ltd., Vancouver  
Western Pacific Airlines Ltd., Vancouver





The famous Silver Dart being prepared for flight over Baddeck Bay, N.S., on Feb. 23, 1909.



The 40-passenger North Star was the first pressurized four-engine aircraft to go into service with Air Canada (TCA). The airline purchased 23 of these aircraft, the first in 1947, and they remained its top domestic and overseas carriers until the mid-1950s.



The first Canadian airmail was carried from Ottawa to Toronto on Aug. 27, 1918 in a Curtiss JN-4 (C). It may be said that, for all practical purposes, flight began with the Canadian-built JN-4.

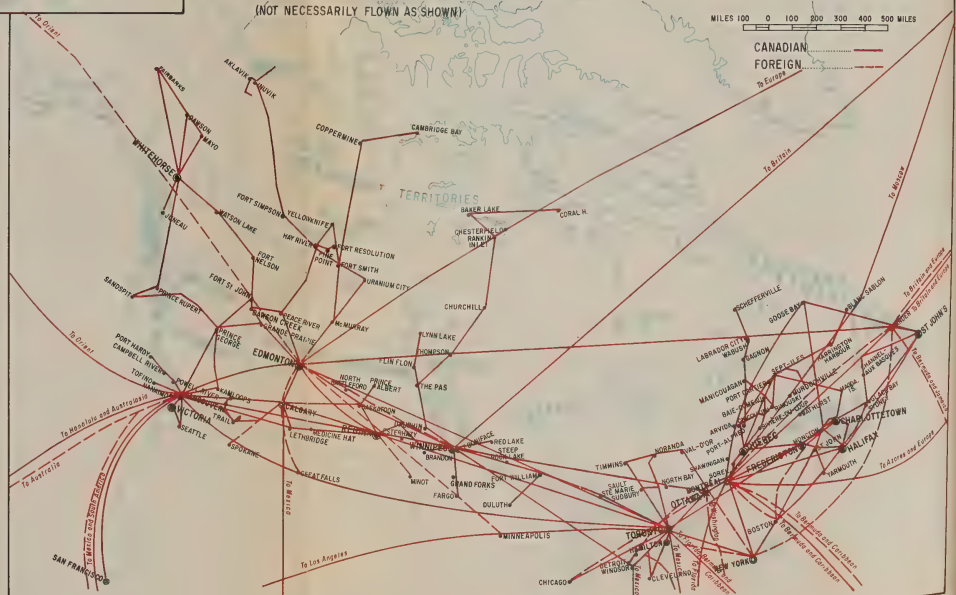
#### A FEW HIGHLIGHTS IN THE HISTORY OF AIR SERVICE IN CANADA



The Fokker Universal seaplane was used extensively in the late 1920s and early 1930s for photo surveying and general barn-storming.

### SCHEDULED AIR ROUTES 1967

(NOT NECESSARILY FLOWN AS SHOWN)



By the end of 1946, TCA had expanded its domestic operations to Victoria, B.C., Blissville, N.B., and Fort William, Ont. Trans-border services were extended from London, Ont., to Chicago and Cleveland; Victoria to Seattle; and Saint John, N.B., and Yarmouth, N.S., to Boston.

The postwar advance in technology was so rapid and so radical that the Department of Transport, which was responsible for providing or ensuring the provision of all necessary ground support services—airports, aids to navigation, air traffic control, weather and communication systems and so on—was at times unable to keep abreast of them. Most Canadian cities had, with government assistance, built airports before the War that were good enough to become links in the transcontinental system. These were leased for training or other military purposes during the War and, as part of the process, most of them were enlarged and considerably improved. However, at the end of hostilities, airline operation had assumed such a high degree of sophistication that the airport proper merely provided a convenient base on which or around which the other services could be concentrated. Complex airport and approach lighting systems; customs, immigration and health facilities; airport and airway traffic control; electronic low-ceiling approach systems; meteorological and pilot-briefing centres and the nervous systems—the radio and electronic complexes necessary to keep this organism alive and alert—required such a high degree of standardization and entailed so much expense that municipal operation of these was out of the question. Some municipalities decided to retain control of the actual airport, including the terminal building, but the majority preferred to leave administration, and occasionally ownership, in Federal Government hands.

This posed, as it still does, a financial problem of some magnitude. Most industrial states possess large populations and small land areas which can be served by one or two first-class airports. The reverse is true in Canada. History and geography have conspired to make Canada the world's great transit area or, if one is militaristically minded, the great buffer state of all time. The airline routes from northern Europe and Asia naturally flow over Canada. As one of the leaders in world aviation and as a signatory to the Chicago Convention, Canada must provide the facilities necessary to ensure safe flight over its vast territory. The challenge has therefore been accepted but entails the construction and maintenance of 10 major airports, with Whitehorse, N.W.T., at one flank and Gander, Nfld., at the other, concerning which no single community can be expected to accept more than a token responsibility; and there are a dozen-and-a-half more which, because of involvement in trans-border operations, merit some federal aid. The resources of the Department of Transport have therefore, been taxed to the limit in meeting these needs. Statistics show that, among the 'have' nations, of which Canada is one, air traffic, since 1945, has doubled approximately every five years. The tasks imposed on the ground-support services involved not only the increasing volume but the vastly increased sophistication needed to maintain that volume; increasing size, speed, ceiling and performance of aircraft called for new equipment, new techniques, even new trades or professions in maintaining ground services.

Postwar changes were swift and relentless. By the end of 1945 the first fleet of aircraft operated by TCA was facing obsolescence and steps were being taken to replace the domestic fleet with the 21-passenger DC-3s. Orders had also been given for a fleet of modified 40-passenger DC-4s, renamed the *North Star*, for both domestic and overseas operations; meanwhile, the Canadian Government Trans-Atlantic Air Service continued in operation using six Lancasters.

Canadian Pacific Airlines never became reconciled to the single chosen-instrument concept for either domestic or international operations, and historical developments soon forced a change of Government policy. The pressure of events during the War had left in the hands of CPA the operation of the Vancouver-Fort St. John and Edmonton-Fort St. John-Whitehorse service, which the CPA subsidiary, Yukon Southern Air Transport, had pioneered. During the last days of the War when all efforts were concentrated on crushing Japan, this had become an exceedingly busy and important line of communication

and, because CPA was organized and equipped to operate over it, the inevitable concomitant was to leave CPA to enjoy its well-earned laurels, exercising what is known in technical jargon as *Grand Father* rights. Thereafter, between second-thinking in policy-making circles in Ottawa and aggressive and enlightened planning on the part of CPA, the latter proceeded to divest itself of the essentially bush operations while concentrating on expansion of the several inter-urban services it possessed. Few of the services were lucrative but by operating them the company maintained both its training standards and its equipment at a level in keeping with that of a first-class airline operator.

A significant modification of Government policy in 1948 enlarged the chosen-instrument concept to cover the operations of CPA in the Pacific north and south and, in July 1949, operations were started to Auckland, New Zealand, and Sydney, Australia via San Francisco, Honolulu and Fiji. This was followed in September of that year by a service to Hong Kong and Tokyo by way of Alaska. Services were extended to Mexico City and Lima, Peru, in 1953. Two years later, a trans-polar route linking Sydney, Australia, to Amsterdam via Vancouver was inaugurated. That same year, CPA relinquished its domestic operations in Quebec and took over the service between Toronto and Mexico City previously operated by TCA. In May 1957, CPA entered the transcontinental field by operating a service between Vancouver, Lisbon and Madrid via Montreal; this, in 1960, was extended to Rome and, in the south, services were extended to Santiago, Chile and Buenos Aires. During 1959 there was a complete change of Government policy and CPA was granted a daily transcontinental service between Vancouver and Montreal via Winnipeg and Toronto.

TCA began a service between Canada and the West Indies in 1948—first running from Toronto to Nassau and Port-of-Spain and later to Bermuda and Barbados, Trinidad and ultimately, in 1953, to Montego Bay, Jamaica. A service from London to Paris was started in 1951 and from London to Dusseldorf, Germany, in 1952. Brussels and Vienna and Zurich were added in 1958 and 1959, respectively. Thus by 1960, TCA services were extended to cover the principal cities of northern Europe. In December of that year the airline made its 1,000th crossing of the Atlantic and was permitted to extend its service from Prestwick to London. It had now assumed full responsibility for what had been the Canadian Government Trans-Atlantic Air Service and this service was officially recognized as a commercial operation.

The general types of aircraft used by the two great companies followed a somewhat similar pattern. DC-3s or similar types with a capacity of about 25 seats and a cruising speed of 180 mph. were introduced around 1945 and the 40-passenger *North Star*, with useful speed of about 270 mph. and a range of 3,500 miles, came into use in 1948. *Constellations*, *Super-Constellations* or *Douglas DC-6Bs* were introduced around 1954 but were soon out-classed by aircraft using a radically new power-plant—the jet-turbine engine. *Vickers Viscounts* or *Bristol Britannias* (propeller-driven jet turbine aircraft) were commissioned during 1956-58 but the most radical change in equipment occurred in 1960 when the DC-8 jet-turbines, with seating capacity for 120 passengers, a range of 4,000 miles and a speed of 560 mph., came into service. One configuration of this aircraft will carry 50,000 lb. of freight and 69 passengers. By agreement, both companies are equipped with the same type of aircraft.

Air Canada (as Trans-Canada Air Lines was re-named in 1964) was the first international airline to operate an entire fleet of jet-powered aircraft. Canadian operators have led in this field and both companies have kept abreast of the best international operators in the safety, efficiency, speed and comfort of their services. These, by international agreement effected through the agency of the International Air Transport Association (IATA), are the only sectors in which competition is allowed. Fares on international services are set by international agreement and domestic fares come under the purview of the Air Transport Board.



Canada's position in air transportation is what would be expected of one of the world's wealthiest nations which is also possessed of one of the world's largest land masses. The two great airline systems shuttle across the settled southern belt making over 50 round trips daily during the peak season, in a matter of five to seven hours, between Vancouver and Montreal. Six large regional operators serve all those settled or partially settled parts of Canada outside of the territories served by Air Canada and CPA and these operations, combined with extensive charter, executive and private flying, place Canada in the world's second position in the use of aircraft.

Air Canada, which holds ninth place as an international carrier, serves most of the United States, the Caribbean area and Northern Europe including the British Isles, using sub-sonic jets, with a frequency varying between 25 return flights weekly to Britain to thrice weekly to Zurich and Vienna. CPA operates across the North Pacific from Vancouver to Tokyo and Hong Kong, and across the central Pacific to Australia and New Zealand by way of Honolulu. Mexico City, Lima, Peru, Santiago, Chile, and Buenos Aires, Argentina, are served on a weekly basis. In effect, Canada, as one of the world's great trading nations, has established the most rapid transportation connections available with the Western Hemisphere, Western Europe and the Eastern Orient.

In international flying alone, Canada stands in fifth place in the world. For all types of flying, domestic and international, Canada's position is third and, as has been mentioned, in domestic flying alone, Canada is in second position.

## Section 1.—Civil Aviation Administration and Policy

**Administration.**—Civil aviation in Canada is under the jurisdiction of the Federal Government and is administered under the authority of the Aeronautics Act, 1919 and amendments thereto. The Aeronautics Act is in three parts. Broadly speaking, Part I deals with the technical side of civil aviation comprising matters of registration of aircraft, licensing of airmen, the establishment and maintenance of airports and facilities for air navigation, air traffic control, accident investigation and the safe operation of aircraft. This Part of the Act is administered by the Director of Civil Aviation under the supervision of the Assistant Deputy Minister, Air Services, Department of Transport. Part II of the Act deals with the social and economic aspects of commercial air services and assigns to the Air Transport Board certain regulatory functions of commercial air services (see p. 787). Part III deals with matters of government internal administration in connection with the Act.

**International Air Agreements.**—The position of Canada in the field of aviation as well as its geographical location makes co-operation with other nations of the world engaged in international civil aviation imperative. Canada therefore took a major part in the original discussions that led to the establishment of the International Civil Aviation Organization (ICAO) which has headquarters at Montreal, Que. A special article on The International Civil Aviation Organization and Canada's Participation Therein appears in the 1952-53 Year Book, pp. 820-827. At present, Canada has air agreements with 21 other countries.

**Federal Civil Aviation Policy.**—The intent of Federal Government concern in civil aviation is to provide an efficient and stable service for the Canadian public and the best possible economic framework for the major and regional carriers. In formulating its aviation policy in 1964, three principles were accepted by the Government as basic. The first related to the international field and stated that air services provided by Canadian airlines should serve the Canadian interest as a whole; that these services should not be competitive or conflicting but should represent a single integrated plan which could be achieved by amalgamation, by partnership or by a clear division of fields of operations. The two major airlines agreed that the most effective way to carry out this policy would be by a clear division of their fields of operations so that outside Canada neither airline

would serve any point served by the other. As a result, it was decided that Canadian Pacific Airlines Limited would serve the whole Pacific area, the whole Continent of Asia, Australia and New Zealand, Southern and Southeastern Europe and Latin America, and that Air Canada would serve Britain, Western, Northern and Eastern Europe, and the Caribbean. The only exception to this clear-cut division is that CPA would continue to serve the Netherlands. This division accounts for the whole of the world except Africa and the United States; decisions concerning the former depend on the contemplation of service to that area and those concerning the latter on the completion of new bilateral agreements. Co-operation is maintained between the two carriers in sales and agency relationships, each carrier representing the other outside its own area, so that passengers are encouraged to travel to their destinations by Canadian airlines. Other measures of co-operation, including joint advice to the Government on air negotiations and joint servicing and support arrangements, are maintained.

The second principle concerned the domestic mainline services and stated that, although competition was not to be rejected, development of competition should not compromise or seriously injure the economic viability of Air Canada's domestic operations which represent the essential framework of its network of domestic services, and in the event that competition continues, opportunity should be ensured for growth to both lines above this basic minimum. In 1965 a special aviation consultant was appointed to advise whether the growth of domestic mainline service would permit some further degree of competition and to recommend the procedure for working out such extensions of service. The report of the consultant is now (December 1966) being examined.

The third principle concerned the role of regional air carriers providing scheduled service and their relationship with the mainline carriers. Recommendations were prepared by the two major airlines and the larger regional carriers which resulted in a "Statement of Principles for Regional Air Carriers" tabled in the House of Commons on Oct. 20, 1966, by the Minister of Transport. These principles are summarized as follows:—

- (1) Regional carriers will provide regular route operations into the North and will operate local or regional routes to supplement the domestic mainline operations of Air Canada and CPA; they will be limited to a regional role.
- (2) Greater scope will be allowed regional carriers in the development of routes and services by the following means: (a) where appropriate, limited competition on mainline route segments of Air Canada or CPA may be permitted to regional carriers if this is consistent with their local route development; (b) in a few cases, secondary routes at present operated by Air Canada and CPA may become eligible for transfer to regional carriers; and (c) a larger role will be allotted to regional carriers in connection with the development of domestic and international charter services, inclusive tours and new types of services.
- (3) Greater co-operation between the mainline carriers and the regional carriers will be developed in a variety of fields, ranging from technical and servicing arrangements to joint fare arrangements.
- (4) A limited policy of temporary subsidies for regional routes will be introduced, to be based upon a "use it or lose it" formula.
- (5) Firmer control will be exercised over the financial structure of regional carriers in connection with new licensing arrangements.
- (6) Regional carriers will be assisted with the acquisition of aircraft by development of a scheme for consultation between government and the carriers regarding plans for new aircraft, and by a special investigation designed to explore the possibility of developing a joint approach to this problem on the part of the carriers.

Thus, in the international field, the joint approach to the provision of world-wide service by the two major Canadian carriers is intended to strengthen their position in a very competitive field and provide a better over-all service to the travelling public. In the domestic field, a degree of competition remains to provide the public with the advantages that can result from a competitive atmosphere but avoids excesses of competition, which could be ruinous to the operators and unsatisfactory to the public.

A new National Transportation Act defining and implementing the national transportation policy, including the civil aviation policy, was passed by the Federal Parliament on Jan. 27, 1967 (SC 1967, c. 69).



## Section 2.—Current Air Services

Two major airlines, Air Canada and Canadian Pacific Airlines Limited, form the nucleus of Canada's freight and passenger air service. Current operations of these airlines are discussed briefly below, followed by short outlines of the services provided by independent airlines and a list of Commonwealth and foreign air carriers licensed to operate services into Canada.

Broadly, air transport services in Canada may be grouped into two classes—Scheduled Services and Non-scheduled Services. Services in the first group are operated by air carriers that offer public transportation of persons, mails and/or goods by aircraft, serving designated points in accordance with a service schedule and at a toll per unit. The second group includes the following:—

- (1) Regular Specific Point Air Services—operated by air carriers that offer public transportation of persons, mails and/or goods by aircraft serving designated points on a route pattern and with some degree of regularity, at a toll per unit.
- (2) Irregular Specific Point Air Services—operated by air carriers that offer public transportation of persons, mails and/or goods by aircraft from a designated base, serving a defined area or a specific point or points, at a toll per unit.
- (3) Charter Air Services—operated by air carriers that offer public transportation of persons and/or goods by aircraft from a designated base, at a toll per mile or per hour for the charter of the entire aircraft, or at such other tolls as may be permitted by the Air Transport Board.
- (4) Contract Air Services—operated by air carriers that do not offer public transportation but who transport persons and/or goods solely in accordance with one or more specific contracts.
- (5) Flying Clubs—operated by air carriers incorporated as non-profit organizations for the purpose of furnishing flying training and recreational flying to club members.
- (6) Specialty Services—operated by air carriers for purposes not provided for by any other class, such as flying training, recreational flying, aerial photography and survey, aerial pest control, aerial advertising, aerial patrol and inspection, etc.

**Air Canada.**—Continued development in all phases of Air Canada's operations made 1965 an exceptional year in terms of both traffic and revenues. The airline carried 4,753,395 passengers on scheduled and charter services, an increase of 13 p.c. over 1964. The volume of business exceeded expectations, the airline sharing in a general increase throughout the industry, with virtually all major air carriers reporting notable traffic growth. Total scheduled seat miles offered were 5,458,000,000, up 18 p.c., and revenue passenger-miles flown exceeded 3,542,000,000, an increase of 21 p.c. The passenger load factor rose from 63 p.c. in 1964 to 65 p.c. in 1965.

North American passenger-miles flown, which represented almost three quarters of Air Canada's scheduled passenger traffic, increased 17 p.c. as the airline introduced additional services on most major domestic routes; 2,591,000,000 domestic passenger miles were flown in 1965 compared with 2,213,000,000 in 1964. There was a 33-p.c. increase in scheduled transatlantic passenger traffic, following a 23-p.c. increase in 1964 which resulted from new low fares introduced in April of that year. These same low fares, coupled with greater flight frequencies and additional non-stop services, accounted in large measure for the substantial advancement in 1965. On the routes to Florida, Bermuda, the Bahamas and the Caribbean, passenger-miles flown exceeded 307,000,000, up 36 p.c. over 1964.

For the fourth successive year there was a marked expansion in commodity traffic in 1965, air freight increasing 36 p.c. to 56,000,000 ton-miles and surpassing mail as a source of revenue. Air express rose 27 p.c. to 5,500,000 ton-miles. This exceptional growth was the result of added jet freighter capabilities as well as the rapidly growing awareness by the business community of the advantages of air transport in marketing plans.

At the end of 1965, Air Canada was operating over 42,343 unduplicated route miles, linking Canada, the United States, the British Isles, Continental Europe and the Caribbean.



Its fleet consisted of 16 Douglas DC-8 jetliners and 23 Vickers Vanguard and 39 Vickers Viscount turbo-prop aircraft. The company became committed in 1965 to the purchase of 16 new jets to be delivered in 1967. These, together with eight others specified in 1963 and 1964 for delivery in 1966, will increase Air Canada's fleet of jets to 40 by June 1967.

### 1.—Operating Statistics of Air Canada, 1956-65

Year	Traffic				Operating Revenue			Operating Expenditure	Operating Surplus
	Revenue Passenger <sup>1</sup>		Revenue Commodity <sup>2</sup>	Mail	Passenger	Freight and Mail	Total <sup>3</sup>		
	No.	'000 passenger-miles	'000 ton-miles	'000 ton-miles	\$'000	\$'000	\$'000	\$'000	\$'000
1956.....	2,072,912	1,191,784	14,476	8,613	74,479	15,639	91,306	89,197	+2,109
1957.....	2,392,713	1,385,777	15,478	9,855	86,524	16,055	104,996	96,680	+8,315
1958.....	2,785,523	1,625,689	15,395	10,386	101,553	17,407	120,555	108,130	+12,425
1959.....	3,209,197	1,828,902	17,753	10,905	114,339	18,293	134,679	120,120	+14,559
1960.....	3,440,303	2,050,600	20,868	11,593	127,596	19,307	148,987	134,263	+14,724
1961.....	3,712,068	2,481,122	24,091	11,934	143,301	19,466	165,436	143,370	+22,066
1962.....	3,865,408	2,659,578	29,827	12,862	158,792	21,914	183,473	152,821	+30,652
1963.....	3,966,547	2,887,239	35,781	13,859	167,653	24,088	199,390	161,816	+37,574
1964.....	4,189,349	3,150,956	45,590	15,731	177,091	27,684	213,909	175,752	+38,157
1965.....	4,753,395	3,715,635	61,662	17,287	209,926	31,839	250,126	205,138	+44,988

<sup>1</sup> Includes non-scheduled service.

<sup>2</sup> Includes excess baggage and express.

<sup>3</sup> Includes other revenue.

**Canadian Pacific Airlines Limited.**—CPA in 1965 operated a 52,000-mile route pattern linking five continents and major cities of Canada. This included 7,000 miles of Canadian routes, 2,450 miles of which was transcontinental service. In 1965, the airline carried 630,816 passengers, the largest number since the company's formation in 1942. Revenue passenger-miles showed a substantial gain to 1,144,936,000, passing the billion-mile-mark for the first time.

CPA's international routes, 45,000 miles in extent, operate from Vancouver to Honolulu, Fiji, New Zealand and Australia on the South Pacific service; to Japan and Hong Kong via the Great Circle Route across the North Pacific; from Vancouver via Calgary and Edmonton to Amsterdam on the Polar Route, and across the Atlantic from Toronto and Montreal to Holland, the Azores, Portugal, Spain and Italy. A South American network serves Mexico, Peru, Chile and Argentina from Montreal, Toronto and Windsor in Eastern Canada and from Vancouver and Calgary in the West. Within Canada a transcontinental service links Vancouver, Winnipeg, Toronto and Montreal and a network of north-south routes serves British Columbia, the Yukon and western Alberta.

CPA's fleet consists of 17 aircraft—six Douglas DC-8 jets, eight Douglas DC-6Bs and three Douglas DC-3s. Four DC-8 series 63, the so-called 'stretched jets', are on order for delivery during 1967. These aircraft will carry 205 passengers in CPA's seat plan. The international and transcontinental routes are served by DC-8 jets, with the propeller types flying on the shorter domestic lines.

**Independent Airlines.**—In addition to the two major Canadian air carriers—Air Canada and Canadian Pacific Airlines Limited—there are four domestic air carriers licensed to operate scheduled commercial air services in Canada, namely, Eastern Provincial Airways (1963) Ltd., Gander, Nfld.; Quebecair, Rimouski, Que.; TransAir Limited, Winnipeg, Man.; and Pacific Western Airlines Ltd., Vancouver, B.C.

Licensed Canadian air carriers operating in Canada as at Mar. 31, 1966 held valid operating certificates covering 38 scheduled, 168 flying training, and 1,595 other non-scheduled and specialty services. These non-scheduled services, in addition to providing effective access to sections of Canada that are inaccessible by other means of transportation,

act as feeder lines to the scheduled airlines. They also include such specialty services as recreational flying, aerial photography and surveying, aerial pest control, aerial advertising, aerial patrol and inspection.

*Eastern Provincial Airways (1963) Ltd.*—This company operates throughout the Atlantic Provinces, eastern Quebec and Labrador. It serves Charlottetown and Summerside in Prince Edward Island; Moncton and Dalhousie in New Brunswick; New Glasgow and Halifax in Nova Scotia; Deer Lake—Corner Brook, Gander and St. John's in Newfoundland; Goose Bay and Saglek in Labrador; and Sept Îles and the Magdalen Islands in Quebec.

The Airways fleet consists of three Handley-Page Dart Heralds, one DC-4, three DC-3s, two PBY Cansos, five DH Beavers and five DH Otters. The Company carries on an extensive air freight service throughout the above areas and conducts many specialty services such as mineral exploration, the transporting of hunting and fishing parties, ambulance service and forestry, seal and ice patrol services.

*Quebecair.*—Quebecair, with head office at Rimouski, offers scheduled services in Quebec and Labrador. The company dates from 1946 and was founded under the name "Le Syndicat d'Aviation de Rimouski". In 1947 the name was changed to Rimouski Airlines and the company inaugurated an air transport service between the shores of the Gulf of St. Lawrence, linking Matane, Mont Joli, Rimouski, Forestville, Baie Comeau and Sept Îles. Until 1953 service was limited to towns and small centres located between Rimouski and Gaspé on the south shore of the St. Lawrence River and between Forestville and Sept Îles on the north shore. In 1953 with the amalgamation of Gulf Aviation the name Quebecair was adopted. With the expansion of mining and industrial activities, Quebecair extended its network to Quebec City and Schefferville in 1955, to Montreal in 1957, to Gagnon and Rivière du Loup in 1959, to Wabush in 1960, to Manicouagan and Saguenay in 1961 and to Murray Bay in 1962.

During 1965, Quebecair acquired Matane Air Services Ltd., Northern Wings Ltd., Northern Wings Helicopters Ltd., and merged its scheduled services with those of its two subsidiaries Northern Wings Ltd. and Matane Air Services Ltd. Quebecair is primarily responsible for the operation of scheduled service by large aircraft; the subsidiaries are charged with handling flights by light aircraft, charters and contract services.

Scheduled services over 4,000 unduplicated miles are operated, and some 30 localities situated in nine economic regions of Quebec and Labrador are served on a daily basis. Points linked are: Montreal, Quebec, Murray Bay (Charlevoix), Rivière du Loup, Rimouski, Mont Joli, Matane, Saguenay, Forestville, Baie Comeau (Hauterive), Manicouagan, Sept Îles, Gagnon, Wabush (Labrador City), Schefferville, Rivière au Tonnerre, Mingan, Havre St. Pierre, Port Menier, Gaspé, Baie Johan Beetz, Aguanish, Natashquan, Kégaska, Gethsémanie, Harrington Harbour, Tête-à-la-Baleine, La Tabatière, St. Augustin, Old Fort Bay, St. Paul and Blanc Sablon.

At the end of 1965, the combined fleet of Quebecair and subsidiaries totalled 32 aircraft: four turbo-prop Fairchild F-27s, nine DC-3s, two Canso PBYs, one Curtiss C-46, three Lockheed 10s, one Beechcraft D-18, two Otter, four Beaver, one Cessna 185, three Bell Helicopters 47-G-2 and two Bell Helicopters 47-G-4.

*TransAir Limited.*—TransAir Limited, with headquarters at the Winnipeg International Airport, operates scheduled, non-scheduled and sportsmen's flights in Manitoba, Saskatchewan, Ontario and the Northwest Territories and charter flights throughout Canada and from Canada to points around the world. The company's scheduled mainline services are operated in three areas: (1) The Prairies—from Winnipeg to Brandon—Regina—Saskatoon—Prince Albert and return and from Winnipeg to Dauphin—Yorkton and return; (2) Manitoba and Central—from Winnipeg to The Pas—Thompson—Churchill and return, from Winnipeg to The Pas—Flin Flon—Lynn Lake and return, and from Winnipeg to Red Lake and return; and (3) Arctic—from Churchill to Rankin Inlet—Baker Lake and return and from Churchill to Rankin Inlet—Coral Harbour and return.



TransAir has 23 aircraft, 16 of which are multi-engine including DC-7C, DC-6, Viscount, DC-4, DC-3, PBY 5A Canso and Beechcraft, stationed at Winnipeg and at the company's major base at Churchill, Man., together with single-engine float and ski-equipped Beaver and Norseman aircraft positioned at Churchill and Norway House, Man., and at Sioux Lookout and Pickle Lake, Ont. Scheduled and charter flights also originate from these bases to many points adjacent to them. The DC-7C is used primarily on international and other long-range charter flights. Since 1961 TransAir has operated from Winnipeg and Churchill, under contract with the United States Air Force, the vertical re-supply flights to the four main sites in the Canadian sector of the Distant Early Warning Line in the extreme Arctic and is now regarded as the largest contract cargo carrier in Canada.

Some of TransAir's main 1965 statistics are: number of employees, 353; number of pilots, 56; unduplicated route miles, 8,074; passengers carried, 85,022; miles flown, 3,521,966; and total revenue ton-miles, 4,680,170.

*Pacific Western Airlines Ltd.*—Pacific Western Airlines Ltd., with head office at Vancouver International Airport, operates over more than 7,700 route miles; its services include scheduled mainline, local regular unit toll and charter flights in Saskatchewan, Alberta, Yukon Territory, the Northwest Territories including the Arctic islands, and British Columbia. Regularly scheduled mainline services are operated northbound from Edmonton to Dawson Creek, Peace River, McMurray, Uranium City, Fort Smith, Cambridge Bay, Fort Resolution, Hay River, Yellowknife, Fort Simpson, Wrigley, Norman Wells and Inuvik. The first no-reservations-required AirBus service in Canada operates daily between Edmonton and Calgary. The company also operates international charter services.

On the Pacific Coast, mainline services are operated from Vancouver to Comox, Powell River, Campbell River, Hudson Hope and Port Hardy and local services are operated between Prince Rupert, Stewart, Ford's Cove, Anyox, Maple Bay and Alice Arm in northern British Columbia. In addition, local charter services are operated out of Vancouver, Nelson, Kamloops, Prince George and Prince Rupert and large aircraft charter services are operated from major centres.

Aircraft operated by Pacific Western number 36 and range from DC-7Cs, DC-6Bs, DC-6s, DC-4s, Super 46s and DC-3s on mainline services, to Otters, Beavers, Grumman Goose and Cessnas on charter and freight flights. Revenue passengers carried in 1965 totalled 280,426, freight and express carried amounted to 27,087,600 lb. and miles flown numbered 6,490,931.

**Commonwealth and Foreign Scheduled Commercial Air Services.**—At the end of 1966, there were 23 Commonwealth and foreign air carriers holding valid Canadian operating certificates and licences issued for the following international scheduled commercial air services into Canada:—

*Aeronaves de Mexico, S.A.*, operating between Montreal and Toronto (Canada) and Mexico City (Mexico).

*Air France (Compagnie Nationale Air France)*, operating between Paris and other points in Metropolitan France, Montreal (Canada) and Chicago (U.S.A.) and beyond.

*Alitalia (Italian International Airlines)*, operating between Rome and Milan (Italy), Montreal (Canada) and Chicago (U.S.A.).

*American Airlines, Inc.*, operating between Toronto (Canada) and New York/Newark (U.S.A.).

*British Overseas Airways Corp.*, operating between London and Manchester (England), Prestwick (Scotland), Montreal and Toronto (Canada) and Boston, New York and Chicago (U.S.A.), and between London (England), Prestwick (Scotland), Gander (Canada), Bermuda, Nassau, Montego Bay, Barbados and Trinidad.

*Deutsche Lufthansa Aktiengesellschaft (Lufthansa German Airlines)*, operating between Hamburg (Germany) and other points abroad, Montreal (Canada) and Chicago (U.S.A.).

*Eastern Air Lines, Inc.*, operating between the terminals Ottawa and Montreal (Canada) and New York (U.S.A.), and between the terminals Ottawa and Montreal (Canada) and Washington (U.S.A.).

*Irish International Airlines (Aerlínte Éireann Teoranta)*, operating between Shannon (Ireland) and Montreal (Canada).



*KLM Royal Dutch Airlines*, operating between Montreal (Canada) and Amsterdam (Netherlands).

*Mohawk Airlines, Inc.*, operating between Toronto (Canada) and Buffalo (U.S.A.).

*North Central Airlines, Inc.*, operating between Port Arthur/Fort William (Canada) and Duluth/Superior (U.S.A.).

*Northeast Airlines, Inc.*, operating between Montreal (Canada) and Boston (U.S.A.) via Concord, Montpelier-Barre, Burlington and White River Junction (U.S.A.).

*Northwest Airlines, Inc.*, operating between Winnipeg (Canada) and Fargo (U.S.A.) and between Minneapolis/St. Paul (U.S.A.), Winnipeg and Edmonton (Canada), Anchorage (Alaska, U.S.A.) and beyond.

*Pan American World Airways Inc.*, operating between New York and Boston (U.S.A.), Gander (Canada), Shannon (Ireland) and London (England).

*Qantas Empire Airways Ltd.*, operating between Sydney (Australia), San Francisco (U.S.A.) and Vancouver (Canada).

*Sabena Belgian World Airlines*, operating between Brussels (Belgium), Manchester (England), Shannon (Ireland), Montreal (Canada) and New York (U.S.A.).

*Scandinavian Airlines System*, operating between Stockholm (Sweden), Oslo (Norway), Copenhagen (Denmark), Hamburg (Germany) and Montreal (Canada), and New York and Chicago (U.S.A.).

*Seaboard and Western Airlines, Inc.*, operating between points in the United States, Gander (Canada) and points in Europe.

*Swiss Air Transport Company Ltd.*, (Swissair), operating between Zurich and Geneva (Switzerland), Montreal (Canada) and Chicago (U.S.A.).

*United Air Lines, Inc.*, operating between Vancouver (Canada) and Seattle (U.S.A.).

*West Coast Airlines, Inc.*, operating between Calgary (Canada) and Spokane (U.S.A.).

*Western Air Lines, Inc.*, operating between Calgary and Edmonton (Canada) and Great Falls (U.S.A.).

*Wien-Alaska Airlines Inc.*, operating between Whitehorse, Y.T. (Canada) and Fairbanks and Juneau (Alaska, U.S.A.).

**Flying Schools and Clubs.**—At the end of 1965, 86 commercial flying schools were registered as members of the Air Transport Association of Canada. During the year, these schools instructed and graduated 1,756 students as private pilots and 507 students as commercial pilots.

Membership in 33 flying clubs connected with the Royal Canadian Flying Clubs Association numbered 8,806 at the end of 1965. During the year these clubs instructed and graduated 1,297 students as private pilots and 140 students as commercial pilots.

**Weather Services.\***—Weather services are provided by the Meteorological Branch of the Department of Transport to meet the requirements of the general public and all basic economic endeavours such as agriculture, industry, forestry, shipping and fishing. Meteorological service is provided to national and international aviation. The military meteorological requirements in Canada and overseas are met by special co-operative arrangements with the Department of National Defence. The observing and forecasting of ice conditions in navigable waters, both inland and coastal, have expanded rapidly in recent years.

Canadian Weather Offices are linked by 59,700 miles of teletype and radio-teletype circuits, and a national facsimile system 13,700 miles long is used for the distribution of meteorological information in chart form. As of Jan. 1, 1966, the Branch maintained 274 surface synoptic and hourly weather reporting stations, at 34 of which upper air observations are taken, and 2,039 climatological stations, making a total of 2,313 weather reporting stations. One Ocean Weather Station in the Pacific, 1,000 miles west of Vancouver, is maintained under International Agreement.

**Ground Facilities.**—Aircraft landing areas in Canada are listed in Table 2 and classified by administrative agency as licensed or unlicensed land facilities or seaplane bases, and military airfields. Licensed aerodromes are those that are inspected at regular intervals and meet specific standards, whereas unlicensed aerodromes may not meet the same standards. In addition to aerodromes, a network of radio aids to navigation is maintained to facilitate en route navigation and safe landings under instrument conditions.

\* See also p. 75.

On Apr. 1, 1966, the Department of Transport operated 72 low frequency radio ranges and 46 VHF omni-directional ranges. Instrument Landing Systems in operation totalled 43 and there were 218 non-directional beacons in operation. All of the operating facilities are regularly flight-checked and calibrated by civil aviation inspectors. (See also item on Aeronautical Navigation, pp. 878-879.)

**2.—Aircraft Landing Areas classified by Type of Facility and Operator, by Province, as at Apr. 1, 1966**

Type of Facility and Operator	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	N.W.T.	Y.T.	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
<b>Licensed Airports (Land)—</b>													
Department of Transport.....	2	1	3	2	8	18	4	4	5	22	13	4	86
Municipal.....	3	—	1	5	24	19	7	16	22	19	—	3	119
Private.....	2	1	1	3	25	38	5	9	16	2	1	—	103
Heliports.....	—	—	1	—	4	7	1	—	—	6	1	1	21
<b>Unlicensed Aerodromes—</b>													
Department of Transport.....	2	—	—	—	2	4	1	1	—	9	5	4	28
Municipal.....	3	—	2	1	7	7	3	28	48	16	2	4	121
Private.....	3	1	2	11	22	22	35	110	40	74	13	1	334
Abandoned or unknown.....	5	1	—	—	12	8	1	3	—	24	—	—	54
Heliports.....	—	—	—	—	1	2	—	—	—	4	—	—	7
<b>Licensed Seaplane Bases—</b>													
Department of Transport.....	—	—	—	—	—	—	—	—	—	3	1	—	4
Municipal.....	—	—	1	—	1	13	1	—	1	11	—	2	30
Private.....	6	—	3	—	62	102	44	25	3	52	28	4	329
<b>Unlicensed Seaplane Bases—</b>													
Department of Transport.....	—	—	—	—	1	—	—	—	—	16	—	—	17
Municipal.....	—	—	—	—	—	15	3	2	2	8	—	2	32
Private.....	9	—	—	2	21	12	7	6	4	21	7	—	89
Abandoned or unknown.....	14	1	9	6	19	13	12	9	8	15	18	4	128
<b>Military Airfields—</b>													
RCAF.....	2	1	1	2	3	10	4	4	3	3	4	—	37
Army.....	—	—	—	1	—	1	1	—	2	—	—	—	5
RCN.....	—	—	3	—	—	—	—	—	—	—	—	—	3
U.S. Navy.....	1	—	—	—	—	—	—	—	—	—	1	—	2
U.S. Air Force.....	3	—	—	—	—	—	—	—	—	—	17	2	22
<b>Totals, Land Bases.....</b>	<b>20</b>	<b>4</b>	<b>10</b>	<b>22</b>	<b>105</b>	<b>125</b>	<b>57</b>	<b>171</b>	<b>131</b>	<b>176</b>	<b>35</b>	<b>17</b>	<b>873</b>
<b>Totals, Seaplane Bases.....</b>	<b>29</b>	<b>1</b>	<b>13</b>	<b>8</b>	<b>104</b>	<b>155</b>	<b>67</b>	<b>42</b>	<b>18</b>	<b>126</b>	<b>54</b>	<b>12</b>	<b>629</b>
<b>Totals, Military Airfields...</b>	<b>6</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>11</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>3</b>	<b>22</b>	<b>2</b>	<b>69</b>
<b>Grand Totals.....</b>	<b>55</b>	<b>6</b>	<b>27</b>	<b>33</b>	<b>212</b>	<b>291</b>	<b>129</b>	<b>217</b>	<b>154</b>	<b>305</b>	<b>111</b>	<b>31</b>	<b>1,571</b>

**Air Traffic Control.**—The primary functions of the Air Traffic Control Division of the Department of Transport are to expedite and maintain an orderly flow of air traffic and to prevent collision between aircraft operating within controlled airspace and between aircraft and obstructions on the movement area of controlled airports. This is accomplished through airport control, terminal control and area control services. These and other allied services are described below.

*Airport Control Service* provides control service to flights operating in the vicinity of major civil airports where the volume and type of aircraft operations, weather conditions and other factors indicate its need in the interest of flight safety. The service also includes the control of all traffic on the manoeuvring area of the airport. Control is effected by means of direct radiotelephone communication or visual signals. Airport control towers are located at: Whitehorse, Y.T.; Fort St. John, Prince George, Victoria (international), Port Hardy, Abbotsford and Vancouver, B.C.; Lethbridge, Calgary, Edmonton (industrial) and Edmonton (international), Alta.; Saskatoon and Regina, Sask.; Winnipeg (international), Man.; Lakehead, Windsor, London, Toronto Island, Toronto (international), Ottawa (international) and North Bay, Ont.; Montreal (international), Cartierville, Quebec, Baie Comeau and Sept Îles, Que.; Moncton, Fredericton and Saint John, N.B.; Halifax (international) and Sydney, N.S.; and Gander (international) and St. John's, Nfld.

*Area Control Service* provides control service to en route flights operating within controlled airspace during weather conditions that prevent a pilot from seeing other aircraft or obstructions and necessitate his reliance on instruments to conduct the flight. Area control centres are located at Vancouver, B.C., Edmonton, Alta., Winnipeg, Man., Toronto, Ont., Montreal, Que., Moncton, N.B., Goose Bay and Gander, Nfld. Each centre is connected with control towers, terminal control units, communications stations and operation offices within its area by means of an extensive system of local and long-line interphone or radio circuits, and through radio communications facilities available at these stations to all aircraft requiring area control service. Area control centres are also capable of communicating directly with most pilots flying within their control areas. Each area control centre is similarly connected with adjacent centres, including centres in the United States, for the purpose of co-ordinating control of aircraft operating through more than one control area. This communications system permits each centre to maintain a continuous detailed record of all aircraft operating in accordance with the Instrument Flight Rules (IFR) and a general record of aircraft operating in accordance with the Visual Flight Rules within its control area. In addition to providing area control service to aircraft operating within controlled airspace over Newfoundland, the Gander Control Centre provides control service within the airspace over approximately one half of the North Atlantic Ocean. The Vancouver Area Control Centre also provides control service over the Pacific Ocean within the Vancouver Oceanic Control Area.

*Terminal Control Service* consists of the provision of separation to aircraft operating in accordance with IFR in the vicinity of all controlled airports. This service is normally provided by area control centres but separate terminal control units have been established at Calgary, Alta.; Saskatoon and Regina, Sask.; Lakehead, North Bay and Ottawa, Ont.; Quebec, Que.; and Halifax, N.S.

*Northern Area Control Service*, inaugurated Sept. 26, 1963, is provided by the Edmonton, Winnipeg and Goose area control centres for aircraft flying above 23,000 feet, and is available throughout more than 3,000,000 sq. miles of Northern Canada.

*Radar Control Service* is provided extensively in the control of IFR traffic, both in terminal areas and while en route. Terminal service is provided at Vancouver, B.C.; Calgary and Edmonton, Alta.; Regina and Saskatoon, Sask.; Winnipeg, Man.; Lakehead, Toronto, North Bay and Ottawa, Ont.; Montreal and Quebec, Que.; Moncton, N.B.; Halifax, N.S.; and Gander, Nfld. En route service is provided by area control centres and by one radar unit located at Kenora, Ont. Ground Control Approach Service is provided at Gander, Nfld. and Precision Approach Radar Service is provided at St. John's, Nfld.; Halifax, N.S.; Montreal, Que.; Toronto, Ont.; Winnipeg, Man.; and Vancouver, B.C.

*Flight Information Service* is provided by all air traffic control units, but particularly by all area control centres. It consists of advice and information useful for the safe and efficient conduct of flight, including weather reports and forecasts, field condition reports, data concerning aids to navigation, traffic information, refueling and transportation facilities, and other data of assistance to the pilot in planning or conducting a flight.

*Alerting Service* ensures that appropriate organizations are notified of aircraft that may be in need of search and rescue aid. This entails the maintenance and constant supervision of a continuous record of active flights to ensure that failure of an aircraft to arrive at the planned destination notified to air traffic control is detected immediately. The service is available to any pilot who files either a flight plan or flight notification with air traffic control.

*Customs Notification Service* facilitates the routine notification of the appropriate customs agency by pilots who plan to cross the Canada-United States boundary at certain designated customs airports. This is achieved through the prompt notification by air traffic control, at a pilot's request, of the customs officer at the destination airport of the intended arrival and of the need for customs clearance.

*Airspace Reservation Service* provides reserved airspace for specified air operations within controlled airspace and information to other pilots concerning these reservations and military activity areas in controlled and uncontrolled airspace. The Airspace Reservation Co-ordination Office, located at Ottawa, is responsible for co-ordinating all airspace reservations in Canada and in the Gander and Vancouver Oceanic Control Areas.

*Aircraft Movement Information Service* is provided by area control centres to assist the Department of National Defence in establishing the identification of all aircraft operating within specified areas.

**Airport Activity.**—During 1965, Canada's major civil airports were 18 p.c. busier than in 1964. The 33 Department of Transport tower-controlled airports recorded 2,688,239 aircraft movements (landings, take-offs and simulated approaches) compared with 2,288,504 recorded by the same airports in 1964.

Itinerant movements (excluding purely local traffic) accounted for over 40 p.c. of the total traffic and for the second consecutive year Montreal International Airport ranked first in this category. The five leaders were: Montreal International, 107,255; Toronto International, 99,958; Vancouver International, 84,879; Winnipeg International, 74,787;



and Cartierville, 73,170. From 1961 to 1965 itinerant movements increased more than 23 p.c. from 899,265 to 1,113,507, most of the increase occurring in 1964 and 1965.

Montreal reported the greatest number of scheduled flights in 1965 with 62,540 movements. Toronto was a close second with 62,263, followed by Vancouver with 26,110, Winnipeg with 19,234 and Calgary with 16,222. Toronto led in international flights with 33,888 movements, of which 30,856 were to and from the United States. However, Montreal, which had 30,978 international movements, maintained a commanding lead in traffic between Canada and countries other than the United States with 7,840 movements. Gander and Toronto followed with 3,178 and 3,032 movements, respectively. Local movements, which had been declining each year, showed an impressive increase in 1965 to 1,482,740, largely due to increased flying training.

For the fourth consecutive year, Cartierville was the busiest airport in total traffic, having recorded 295,404 movements including local traffic and simulated approaches (instrument practice runs without touching the ground). Montreal International was second with 211,115 movements, followed by Toronto Island with 210,662, Winnipeg with 198,317 and Ottawa with 167,784.

### Section 3.—Civil Aviation Operation Statistics

Table 3 provides a picture of commercial civil aviation in Canada for the years 1962-65. It shows data on miles and hours flown, traffic carried, fuel and oil consumed, employees, salaries and operating revenues and expenses, by type of service, for Canadian air carriers followed by summary statistics for all Canadian carriers and those foreign companies operating scheduled services in Canada. Figures for Canadian carriers include domestic and international operations, and figures for foreign companies cover miles and hours flown over Canadian territory only, and exclude passengers and goods in transit through Canada. Unit toll service refers to the transportation of passengers or goods at a toll per unit, whereas bulk service is the transportation of passengers or goods at a toll per mile or per hour for the entire aircraft. Other flying services comprise non-transportation services such as flying training, aerial photography and aerial patrol and inspection.

#### 3.—Summary Statistics of Civil Aviation, 1962-65

Item	1962	1963	1964	1965 <sup>a</sup>
<b>Canadian Carriers—</b>				
Unit Toll Transportation (revenue traffic only)—				
Departures.....No.	250,900	254,762	245,594	270,488
Hours flown.....“	312,395	298,655	300,798	335,379
Miles flown.....“	76,040,318	75,746,629	76,404,782	86,334,027
Passengers carried.....“	4,792,409	4,864,855	5,197,579	5,939,287
Cargo and excess baggage.....lb.	93,064,818	99,063,385	117,497,668	147,004,678
Mail carried.....“	38,430,775	41,892,927	46,804,224	50,440,235
Passenger-miles.....No.	3,463,727,291	3,623,020,400	3,939,075,129	4,731,304,865
Cargo and excess baggage ton-miles.....“	45,427,320	53,618,163	69,038,182	88,228,205
Mail ton-miles.....“	15,289,672	17,530,240	18,952,877	21,772,396
<b>Bulk Transportation (revenue traffic only)—</b>				
Departures.....No.	220,594	234,685	252,834	281,088
Hours flown.....“	230,525	250,988	263,541	319,926
Miles flown.....“	23,277,049	26,818,278	27,046,832	30,903,936
Passengers carried.....“	476,390	562,489	584,509	631,182
Freight carried.....lb.	105,082,430	110,102,115	106,124,248	108,947,834
Passenger-miles.....No.	..	..	469,807,322	464,825,765
Goods ton-miles.....“	..	..	17,839,881	13,507,018
<b>Other Flying Services (revenue traffic only)—</b>				
Hours flown.....No.	83,382	80,930	97,169	126,469

## 3.—Summary Statistics of Civil Aviation, 1962-65—concluded

Item	1962	1963	1964	1965 <sup>p</sup>
<b>Canadian Carriers, All Services—</b>				
Revenue Traffic—				
Departures.....No.	471,494	489,447	498,428	551,576
Hours flown.....“	626,302	630,573	661,508	781,774
Miles flown.....“	99,317,367	102,564,907	103,451,614	117,237,963
Passengers carried.....“	5,268,799	5,427,344	5,782,088	6,570,449
Goods carried.....lb.	236,578,023	251,058,427	270,426,140	306,382,747
Passenger-miles.....No.	..	..	4,408,882,451	5,196,130,630
Goods ton-miles.....“	..	..	105,830,940	123,507,619
Non-revenue Traffic—				
Hours flown.....No.	25,882	21,738	21,363	29,898
Passenger-miles.....“	176,277,219	203,399,987	207,986,297	224,745,710
Goods ton-miles.....“	6,449,798	6,601,370	7,709,768	7,995,872
Fuel consumed.....gal.	191,343,196	207,490,519	218,042,305	249,336,707
Oil consumed.....“	310,015	405,999	343,128	395,347
Average employees.....No.	17,810	17,577	17,795	18,767
Salaries and wages paid.....\$	105,636,970	108,538,372	116,465,350	122,252,542
Operating revenues.....\$	284,618,321	308,835,913	334,930,874	393,623,066
Operating expenses.....\$	277,333,944	294,142,170	315,569,629	368,223,425
<b>Canadian and Foreign Carriers, All Services—</b>				
Hours flown.....No.	642,284	646,956	679,784	801,129
Miles flown.....“	104,851,093	108,282,021	110,138,322	124,448,003
Passengers carried.....“	6,064,074	6,278,298	6,774,652	7,838,539
Goods carried.....lb.	260,084,003	275,899,568	301,494,757	346,176,884

Summary statistics of Canadian and foreign commercial air carriers, by type of carrier, are shown in Table 4 for 1965. For the foreign carriers, hours and miles reported are those flown over Canadian territory only and passengers and goods in transit through Canada are excluded. It is interesting to note that the six scheduled carriers—those holding Class I or Class II licences from the Air Transport Board—accounted for 91 p.c. of all revenue passengers transported by Canadian carriers during 1965. The weight of goods transported by scheduled carriers amounted to approximately 69 p.c. of the total tonnage moved by all Canadian air carriers.

## 4.—Summary Statistics of Canadian and Foreign Commercial Air Carriers, 1965

Item	Canadian Carriers		Foreign Carriers		All Carriers
	Domestic Services	International Services	United States	Other Foreign	
<b>Unit Toll Transportation (revenue traffic only)—</b>					
Departures.....No.	233,573	36,915	..	..	353,670
Hours flown.....“	252,120	83,259	3,959	14,332	353,670
Miles flown.....“	56,173,756	30,160,271	1,019,906	5,805,217	93,159,150
Passengers carried.....“	4,185,277	1,753,990	867,093	362,747	7,169,107
Goods carried.....lb.	147,186,463	50,258,450	14,129,497	25,647,053	237,221,463
Passenger-miles.....No.	2,622,336,475	2,108,968,390	36,173,157	298,015,193	5,065,493,215
Goods ton-miles.....“	67,513,736	42,486,865	320,477	9,591,717	119,912,795
<b>Bulk Transportation (revenue traffic only)—</b>					
Departures.....No.	277,224	3,864	..	..	320,990
Hours flown.....“	305,044	14,882	82	982	320,990
Miles flown.....“	26,323,470	4,580,466	20,936	363,981	31,288,853
Passengers carried.....“	508,726	122,456	7,061	31,189	669,432
Freight carried.....lb.	108,483,667	464,167	—	7,587	108,955,421
Passenger-miles.....No.	74,400,085	390,425,680	..	..	..
Goods ton-miles.....“	13,255,544	251,474	..	..	..

### 5.—Expenditure and Revenue of the Department of Transport in connection with Air Services, Years Ended Mar. 31, 1963-65

Item	1963	1964	1965
	\$	\$	\$
<b>Expenditure</b>			
<b>Air Transport Board</b> .....	<b>814,487</b>	<b>632,757</b>	<b>687,633</b>
<b>Air Services</b> .....	<b>5,630,511</b>	<b>5,756,339</b>	<b>6,194,861</b>
General Administration.....	1,908,955	1,939,788	2,093,516
Construction Services Administration.....	3,721,556	3,816,551	4,101,345
<b>Civil Aviation Branch</b> .....	<b>32,591,336</b>	<b>34,773,191</b>	<b>40,792,285</b>
Control of Civil Aviation.....	4,043,075	5,137,669	6,671,301
Airports and other ground services—operation and maintenance...	19,754,767	20,280,882	24,113,701
Airway and airport traffic control—operation and maintenance...	8,168,774	8,717,594	9,423,017
Contributions to other governments or international agencies for the operation and maintenance of airports.....	244,596	234,921	272,509
Contributions to assist in the establishment or improvement of local airports and related facilities.....	87,600	126,855	35,556
Grants to organizations for development of civil aviation.....	282,474	272,526	275,294
Exchequer Court Awards.....	10,050	2,744	907
<b>Telecommunications and Electronics Branch</b> .....	<b>21,736,705</b>	<b>23,014,265</b>	<b>24,886,691</b>
Radio aids to air and marine navigation—administration, operation and maintenance.....	18,795,872	19,930,988	21,552,348
Radio Act and Regulations—administration, operation and maintenance.....	2,875,287	3,004,437	3,187,654
Northwest Communications Systems—deficit.....	65,546	69,678	—
Gift of furnishings to ITU.....	—	9,162	—
Payment to CNR re deficit telecommunications facilities.....	—	—	146,689
<b>Meteorological Branch</b> .....	<b>17,403,992</b>	<b>18,461,452</b>	<b>19,496,627</b>
<b>Totals, Expenditure</b> .....	<b>78,177,031</b>	<b>82,638,004</b>	<b>92,058,097</b>
<b>Revenue and Receipts</b>			
<b>Air Services Administration</b> .....	<b>13,128</b>	<b>6,894</b>	<b>6,833</b>
<b>Construction Branch Administration</b> .....	<b>572</b>	<b>694</b>	<b>1,574</b>
<b>Civil Aviation Branch</b> .....	<b>15,676,753</b>	<b>17,189,574</b>	<b>22,743,960</b>
Private air pilots' certificates.....	18,135	18,402	40,357
Airport licence fees.....	1,300	1,795	6,404
Aircraft registration and airworthiness certificates.....	14,155	14,506	33,662
Fines, Aeronautics Act.....	7,246	5,866	3,007
Land rental.....	494,554	536,420	622,936
Other rentals (living quarters, hangar space, equipment, restaurants and snack bars, etc.).....	2,372,865	2,437,895	3,362,672
Concessions (gasoline and oil, taxi, restaurant and snack bar, telephone, parking, car rentals, etc.).....	3,786,018	4,127,031	5,223,337
Aircraft landing fees.....	7,085,134	8,093,469	11,083,829
Aircraft parking and handling.....	78,086	120,462	141,959
Power services.....	163,234	255,717	247,320
Mess receipts.....	26,841	2,560	37,489
Telephone service.....	5,094	5,082	6,555
Observation roof—turnstiles.....	122,976	133,673	133,096
Hanger storage space and heating.....	82,420	74,380	102,563
Sanitary fees.....	74,285	30,916	86,166
Sales (water, land and buildings, parking meters, etc.).....	263,476	310,039	463,833
Gander Airport (coal sales, heating, electricity, etc.).....	48,901	37,874	40,737
Interest on investment.....	8,620	212,730	—
Air route facilities fees.....	444,438	340,776	539,520
Joint user terminal facilities charge.....	313,098	440	495
Air Traffic Control Division.....	678	256,694	375,442
Sundry services and sundries.....	144,168	172,847	142,681
Refunds of previous years' expenditure.....	115,731	—	—
<b>Telecommunications and Electronics Branch</b> .....	<b>3,419,280</b>	<b>3,848,166</b>	<b>4,709,219</b>
Air-ground radio services.....	856,377	1,458,231	1,359,838
Communication facilities.....	2,326	2,093	3,992
Message tolls.....	334,864	305,114	316,592
Private commercial broadcasting station licence fees.....	1,109,160	975,200	1,720,285
Radio operators' examination fees.....	6,931	5,399	5,273
Radio station licence fees.....	500,981	486,487	562,252
Rentals (living quarters, space control lines and power, etc.).....	515,131	533,219	514,879
Sales (land and buildings, power services, publications, etc.).....	32,163	32,722	60,635
Telephone and telegraph services and tolls.....	307	143	52,810
Miscellaneous.....	11,994	16,882	52,782
Refunds of previous years' expenditure.....	49,046	32,676	59,881
<b>Meteorological Branch</b> .....	<b>244,503</b>	<b>222,168</b>	<b>263,001</b>
<b>Totals, Revenue and Receipts</b> .....	<b>19,354,236</b>	<b>21,267,496</b>	<b>27,724,587</b>



Table 6 shows the number of civil air personnel and airport licences in force and the number of civil aircraft registered at the end of each of the years 1964 and 1965.

**6.—Personnel and Airport Licences in Force and Aircraft Registered as at Dec. 31, 1964 and 1965**

Item	1964	1965	Item	1964	1965
No.	No.	No.	No.	No.	No.
<b>Personnel Licences in Force—</b>			<b>Personnel Licences in Force—</b>		
<b>Pilot—</b>			<b>concluded</b>		
Glider.....	763	823	Flight engineers.....	36	59
Private.....	16,159	16,831	Aircraft maintenance engineers...	2,277	2,369
Commercial.....	2,575	2,835	<b>Airport Licences in Force.....</b>		
Senior commercial.....	317	359		685	698
Airline transport.....	1,387	1,533	<b>Aircraft Registered—</b>		
<b>Totals, Pilot Licences.....</b>	<b>21,201</b>	<b>22,381</b>	Commercial.....	2,011	2,137
Air navigators.....	98	128	Private.....	4,722	5,205
Air traffic controllers.....	792	782	State.....	200	200
			<b>Totals, Aircraft Registered..</b>	<b>6,933</b>	<b>7,542</b>

## PART VI.—OIL AND GAS PIPELINES\*

**Oil Pipelines.**—Since the late 1940s large capital expenditures have been made each year for oil pipeline construction. Expenditures in 1965 and 1966 were an estimated \$50,000,000 and \$38,000,000, respectively, and the cumulative total for the period 1950-66 was \$703,000,000.

The prime components of the network of Canadian oil pipelines are the trunk lines of the Interprovincial Pipe Line Company and the Trans Mountain Oil Pipe Line Company. The bulk of the domestic crude oil produced is carried by these lines. The refineries that do not rely on these systems are located in the oil producing regions such as Calgary and Edmonton. The Interprovincial system carries crude oil eastward from Edmonton receiving and discharging oil at various locations along its length. The Trans Mountain system operates similarly westward from Edmonton. Supplying these two trunk lines are pipeline systems funnelling oil from hundreds of fields into storage tanks at the pipeline terminals. Some of these feeder lines are impressive in themselves, not only in size of pipe and in length of route but in the volumes of oil that they transport. Most of the feeder lines are in Alberta, which is to be expected because of the pre-eminent position of that province in oil production. The main pipeline terminal at Edmonton has eight crude oil feeder lines, including the Interprovincial extension to Redwater, as follows:—

Pipeline	Length	Capacity	General Area of Supply Related to Edmonton
	miles	bbl./day	
Britam oil Pipe Line Co.....	410	60,000	south-southeast
Federated Pipe Lines Ltd.....	517	151,000	northwest
Imperial Pipe Line Co.....	311	78,400	southwest
Interprovincial Pipe Line Co.....	31	110,000	northeast
Pam oil Limited (Edmonton Pipeline).....	82	15,000	southeast
Peace River Pipe Line Co.....	691	66	northwest
Pembina Pipe Line Ltd.....	920	154,000	west-southwest
Texaco Exploration Co.....	173	111,000	south

In addition, three pipelines are connected to the Interprovincial at Hardisty, some 100 miles southeast of Edmonton. Here Gibson Associated Oil Ltd. makes deliveries of up to 15,000 bbl. daily of oil from fields just south of the pipeline terminal. Husky Pipe Line Ltd. takes deliveries of condensate and delivers a blended crude, incorporating the light condensate received and the heavy Lloydminster asphaltic crude. The Husky pipeline is a twin line system carrying the condensate to Lloydminster in one line and returning

\* Prepared in the Mineral Resources Division, Department of Energy, Mines and Resources, Ottawa.

the blended oil in the other line, which has a capacity of 15,000 bbl. daily. The third pipeline, Bow River Pipe Line Ltd., carries crudes from the most southerly oil fields in Alberta, those in the Taber area; this line has a capacity of 18,000 bbl. daily. Home Oil Limited operates a pipeline serving refineries in the Calgary area with oil from fields north of the city; the line also has connections with the Rangeland pipeline which, in turn, is linked to the Texaco line going north to Edmonton. Also serving Calgary is the oldest pipeline in Alberta operated by Valley Pipe Line Company which carries crude from the historically important Turner Valley in quantities up to 15,000 bbl. daily.

The Trans Mountain pipeline also has a second receiving terminal in Alberta; west of the community of Edson, the Peace River pipeline makes deliveries to Trans Mountain from fields extending into the northern part of the province. In British Columbia, the Western Pacific Products and Crude Oil Pipelines Ltd. carries crude over a distance of 500 miles from fields near Fort St. John in northeastern British Columbia to the Trans Mountain pipeline at Kamloops; this line has a capacity of 45,000 bbl. daily.

Three main pipeline systems carry crude oil from Saskatchewan fields to the Interprovincial pipeline. The largest is the Westspur Pipe Line Company—Producers Pipelines Ltd. network which delivers crude from the important southeast Saskatchewan producing area across the Saskatchewan—Manitoba border to the Interprovincial terminal at Cromer. Capacity of this system to Cromer is 175,000 bbl. daily. The Westspur—Producers line also carries crude delivered to it by Trans-Prairie Pipelines Ltd. from fields in the Midale area of southeast Saskatchewan. In southwest Saskatchewan, the South Saskatchewan Pipe Line Company takes medium-gravity crude from fields near Swift Current to the Interprovincial pipeline at Regina; this pipeline has a capacity of 70,000 bbl. daily. The third system is the Mid-Saskatchewan pipeline of Royalite Oil Company which carries up to 10,000 bbl. daily of crude oil from the Coleville—Doddsland area to a terminal at Kerrobert.

There is only one pipeline in Manitoba serving the producing fields in the general area of Virden. It carries crude to the Interprovincial terminal at Cromer and has a capacity of 23,000 bbl. daily.

*Interprovincial Pipeline.*—The system of Interprovincial Pipe Line Company is Canada's longest oil pipeline. It incorporates the wholly-owned subsidiary in the United States, Lakehead Pipe Line Company Incorporated, and has a right-of-way length of 2,025 miles including a 95-mile lateral to Buffalo, New York. The system has two complete oil lines between Edmonton and Superior, Wisconsin, and in certain high-traffic sections, such as between Cromer and Gretna, there are three lines. The pipeline can deliver 15 grades of crude oil. Year-end capacity of the various sections of the pipeline are shown below for 1965 and for 1966 after construction is completed.

<u>Section</u>	<u>1965</u>	<u>1966</u>
	bbl./day	bbl./day
Edmonton-Regina.....	364,000	383,000
Regina-Cromer.....	428,000	428,000
Cromer-Gretna.....	575,000	586,000
Gretna-Superior.....	543,000	548,000
Superior-Sarnia.....	434,000	442,000
Sarnia-Port Credit.....	220,000	229,000
Westover-Buffalo.....	36,000	45,000

Interprovincial serves 26 refineries: one at Lloydminster via the Husky pipeline; one at Saskatoon via Saskatoon pipeline from Milden; one at Moose Jaw via B-A Saskatchewan pipeline from Stony Beach; two at Regina; one at Brandon via Anglo Canadian pipeline from Souris; two at Winnipeg via Winnipeg pipeline from Gretna; 11 in the United States either directly or through connecting carriers; three at Sarnia; two at Oakville; one at Clarkson; and one at Port Credit.

*Trans Mountain Pipeline.*—The system of Trans Mountain Oil Pipe Line Company extends from Edmonton to Vancouver via Jasper and has a right-of-way length of 780 miles, including a section of 57 miles in the United States which belongs to a wholly-owned subsidiary of Trans Mountain. The capacity of the system is 250,000 bbl. daily. Trans Mountain serves eight refineries: one at Kamloops; four at Vancouver; and three in the Puget Sound region of Washington State.

*Montreal-Portland Pipeline.*—The Montreal refinery centre is served by a 236-mile pipeline which is a joint system of Montreal Pipe Line Company and its wholly-owned subsidiary in the United States, Portland Pipe Line Corporation. This line takes delivery of tanker-borne crude from Venezuela and the Middle East at Portland, Maine. In 1965, the Company completed a 24-inch pipeline alongside the existing 18- and 24-inch crude oil lines. This provides a very flexible system which can deliver, under existing horsepower, 356,000 bbl. daily to the six refineries at Montreal.

*Product Pipelines.*—Commonly referred to as product pipelines, some of these lines transport refined petroleum products; others move the products of natural gas processing plants such as propane, butane and condensate, some of which are delivered to refineries for the manufacture of refined petroleum products. Consequently, they are a class of pipelines moving various forms of petroleum but not crude oil.

There are three product lines in Eastern Canada, all supplying markets in Ontario with refined petroleum products. Two pipelines, Sun-Canadian Pipe Line Company and Sarnia Products Pipe Line, run from refineries at Sarnia to bulk plants in London, Hamilton and Toronto. Trans Northern Pipe Line Company, once a pipeline carrying products from Montreal to markets in Ontario as far west as Hamilton, now has a two-way flow. Products from Montreal are now delivered only in the area east of Brockville, including the Ottawa valley; products from refineries immediately west of Toronto are carried eastward as far as Kingston.

In Western Canada, the recently constructed Petroleum Transmission Company pipeline carries propane, butane and pentanes plus from a plant at Empress in Alberta to Winnipeg in Manitoba, a distance of 578 miles. The predominant product carried is propane which is also marketed at various locations along the line. Elsewhere in Alberta, the Rimbey Pipe Line Company transports condensate from the Rimbey gas plant and takes deliveries from the Rangeland condensate pipeline to serve areas north of Calgary as far as Edmonton. Also going to Edmonton are three separate pipelines, one each for propane, butane and pentanes plus, running from the Leduc conservation gas plant. Near Calgary, Home Oil Company operates a condensate pipeline to serve refineries there and also to make deliveries to the Rangeland condensate pipeline. There are other condensate pipelines in Alberta, most of which are primarily associated with production and do not serve end users.

*Pipeline Tariffs.*—Typical of the charges to move crude oil are the following pipeline tariffs:—

	Charge	Distance
	cts. per bbl.	miles
Edmonton to Vancouver.....	40.0	718
Edmonton to Regina.....	20.7	438
Edmonton to Winnipeg.....	30.2	847
Edmonton to Sarnia.....	48.0	1,743
Edmonton to Port Credit.....	51.0	1,899
Portland to Montreal.....	10.5	236

*Natural Gas Pipelines.*—Natural gas now accounts for 17 p.c. of Canada's energy requirements and, in addition, large volumes are delivered to markets in the United States. Although relatively small amounts of natural gas are transported in other areas of the world as a liquid under refrigeration, all of the gas used in Canada as well as in North America as a whole is moved by pipeline. Despite the current importance of natural gas,



major gas pipelines were only established in Canada in recent years. It was not until 1958 that natural gas was used in provinces as far east as Quebec. Now, however, there is an extensive network of pipelines serving most centres of population from Vancouver to Montreal and delivering gas to several points of export on the United States border.

Since the mid-1950s, when large-volume gas removal was authorized from Alberta, capital expenditures in gas pipeline construction have constituted a significant proportion of the country's total outlay for transportation facilities. In 1965 and 1966, capital expenditures of \$61,000,000 and \$65,000,000, respectively, were made. The cumulative total in the period 1955-66 was \$1,247,000,000 for gathering and transmission systems with an additional \$796,000,000 for distribution systems.

Pipelines are usually categorized under three headings—gathering lines, transmission lines and distribution lines. The gathering lines are those that take gas from the wells or separators to the field gate or some other specified point. Transmission lines are normally the large diameter pipelines that take gas from gathering lines and deliver it to the distributors principally at the 'city gate'. In total there were 43,360 miles of all types of gas pipeline in operation at the end of 1965, of which 5,029 miles were gathering, 13,806 miles were transmission and 24,525 miles were distribution.

Unlike oil pipeline companies which are common carriers—they transport the oil for a fixed charge—gas pipeline companies, with few exceptions, own the gas that is transported. The principal exception is the Alberta Gas Trunk Line Company which delivers virtually all of the gas exported from Alberta to the provincial boundary where main transmission companies accept delivery. This is an important pipeline system because most of the Canadian gas reserves are in Alberta. The right-of-way distance of Alberta Gas Trunk is 1,788 miles.

Some details of the main transmission systems are contained in the following paragraphs.

*Trans-Canada Pipeline.*—The Trans-Canada pipeline, extending from the Alberta border near Burstall, Sask., makes its way eastward through Saskatchewan and Manitoba to the Ontario Lakehead cities of Port Arthur and Fort William and then follows a broad, northerly-arched route through the clay belt of Ontario, then southward via North Bay to Toronto. There the line divides, one part going to the western region of Ontario and the other, eastward, along the northern shore of Lake Ontario and the St. Lawrence River to Montreal. Lateral pipelines serve communities that are not within the immediate reach of the main pipeline. Trans-Canada is Canada's longest pipeline with a right-of-way distance of 2,384 miles. The maximum amount of gas delivered in any one day by the company in 1965 was 1,249,000 Mcf. Export sales average about 210,000 Mcf. daily.

*Westcoast Transmission Company.*—The supply of gas for Westcoast comes mainly from fields in northeastern British Columbia but significant quantities are gathered in Alberta. The main line from Fort St. John runs in a southerly direction to Vancouver and to the United States border at Sumas, B.C. An extension to its system from the Fort St. John area to the Fort Nelson area permits the pipeline system to pick up gas from the main areas stretching from Dawson Creek to the Yukon-Northwest Territories border. The right-of-way distance of the Westcoast system is 892 miles.

*Alberta Natural Gas Company.*—Although the Alberta Natural Gas pipeline is only 107 miles long it forms part of one of the major gas export pipelines that carries Canadian gas as far south as California. The line extends from the Alberta border through the Crownst Pass to Kingsgate, B.C., where it crosses the International Border and continues through Idaho.

*Other Gas Pipelines.*—There are many other natural gas pipelines operating in Canada. Many are gathering systems and others are exclusively distribution systems. They constitute important sectors of the country's gas pipeline industry, as is evidenced by their aggregate pipeline mileage. To mention a few, Canadian Montana pipeline gathers gas

in the southeastern part of Alberta and transports it southward into the State of Montana; the company also operates a line that purchases gas from Alberta Gas Trunk Lines in the southwestern part of the province. In Saskatchewan the system of the Saskatchewan Power Corporation has gathering, transmission and distribution systems and delivers all of the gas for sale in Saskatchewan; the Corporation had 4,670 miles of pipeline in operation at the end of 1965. Three other systems have gathering, transmission and distribution systems: in Alberta, Canadian Western Natural Gas Company Limited operates in the southern portion of Alberta and Northwestern Utilities in the northern area, the combined length of pipe being 5,072 miles; Union Gas operates mainly in southwestern Ontario picking up gas from some fields that are the oldest in Canada. These and many other systems make up the fast-growing network of gas pipelines in Canada which serves domestic, commercial and industrial customers in all provinces except the Maritimes.

**Oil Pipeline Statistics.\***—There were 45 oil pipeline companies operating in Canada at the end of 1965. Pipeline deliveries shown in Table 1 were made to non-pipeline carriers, foreign pipelines, and terminals including refineries and distributing centres.

\* Statistics of oil pipelines are given in greater detail in the DBS monthly report *Oil Pipe Line Transport* (Catalogue No. 55-001).

### 1.—Pipeline Movements of Oil, 1962-65

Item	1962	1963	1964	1965
	bbl.	bbl.	bbl.	bbl.
<b>Receipts</b>				
Crude Oil and Pentanes Plus—				
Canadian.....	254,874,604	274,030,166	297,792,525	315,623,651
Imports.....	78,811,557	93,559,497	94,230,399	92,234,607
Liquefied Petroleum Gases and Products—				
Canadian.....	53,435,886	63,050,700	67,285,979	75,597,987
Imports.....	337,548	441,095	544,040	364,579
<b>Totals, Net Receipts.....</b>	<b>387,459,595</b>	<b>431,081,458</b>	<b>459,852,943</b>	<b>483,820,824</b>
<b>Deliveries</b>				
Crude Oil and Pentanes Plus—				
Canadian.....	245,872,459	273,784,220	290,207,682	297,394,333
Exports.....	85,789,864	90,248,379	101,532,615	107,651,950
Liquefied Petroleum Gases and Products—				
Canadian.....	52,800,070	62,414,709	64,803,049	73,188,316
Exports.....	831,974	1,034,308	2,712,817	2,679,069
<b>Totals, Net Deliveries.....</b>	<b>385,294,367</b>	<b>427,481,616</b>	<b>459,256,163</b>	<b>480,913,668</b>

Revenue and employee data shown in Table 2 are not complete; both revenue and employee figures have been omitted for some companies, since pipeline operation forms only a part of the activities of these establishments and the data are not separable.

### 2.—Operating and Financial Statistics of Oil Pipelines, 1962-65

Item		1962	1963	1964	1965
Pipeline Mileage—					
Trunk lines.....	No.	6,543	6,926	7,952	8,259
Gathering lines.....	"	3,494	3,681	3,792	4,056
Daily Av. of Net Deliveries—					
Trunk lines.....	bbl.	1,038,194	1,164,640	1,240,007	1,314,842
Gathering lines.....	"	658,595	696,229	737,118	787,050
Barrel Miles—					
Trunk lines.....	'000	166,208,113	175,492,600	191,241,600	203,999,419

## 2.—Operating and Financial Statistics of Oil Pipelines, 1962-65—concluded

Item		1962	1963	1964	1965
Av. Miles per Barrel—					
Trunk lines.....	No.	439	410	416	425
Property account.....	\$	557,709,996	582,515,772	617,758,245	654,023,499
Long-term debt.....	\$	309,781,883	298,791,748	291,144,511	299,200,374
Operating revenues.....	\$	122,747,571	128,635,447	138,478,844	145,809,378
Operating expenses.....	\$	28,056,494	30,436,544	32,118,605	34,498,816
Net income (after income tax).....	\$	35,663,637	39,318,153	45,997,272	55,521,157
Av. employees.....	No.	1,496	1,501	1,492	1,542
Salaries and wages.....	\$	9,934,058	10,323,846	10,665,313	10,929,026

**Gas Pipeline Statistics.**—As already stated, the natural gas transport industry became a significant factor in the Canadian economy in 1957 with the completion of the first of several extensive pipelines constructed to transport natural gas from the field or processing plant to distribution outlets. Consequently, the distribution industry also greatly increased deliveries to consumers from that time. Tables 3 and 4 illustrate this expansion for the years 1962-65.

## 3.—Receipts and Disposition by Natural Gas Utilities, 1962-65

Item	1962	1963	1964	1965
	Mcf.	Mcf.	Mcf.	Mcf.
<b>Receipts</b>				
Transport system.....	562,156,054	638,295,918	727,827,360	812,243,369
Distribution systems.....	219,107,443	208,554,958	216,418,402	216,851,102
Imports.....	5,477,463	6,823,374	9,641,684	17,745,771
Other.....	14,383	257,398	333,127	369,186
Totals, Net Receipts.....	786,755,343	853,931,648	954,220,573	1,047,209,428
From storage.....	26,376,059	27,629,780	27,179,191	34,747,749
<b>Totals, Supply.....</b>	<b>813,131,402</b>	<b>881,561,428</b>	<b>981,399,764</b>	<b>1,081,957,177</b>
<b>Disposition</b>				
Sales to ultimate consumers.....	412,061,509	451,598,298	504,503,388	573,016,223
Exports.....	342,812,316	359,606,260	392,239,429	404,709,025
Other.....	4,080,681	833,466	2,701,725	2,457,815
Totals, Net Deliveries.....	758,954,506	812,038,024	899,444,542	980,183,063
To storage.....	26,034,086	35,960,581	35,515,628	46,168,826
Line pack fluctuation.....	159,985	403,645	683,907	550,307
Gas used in system.....	17,145,463	21,195,062	30,126,023	45,077,034
Line losses and unaccounted amounts.....	10,837,362	11,964,116	15,629,664	9,977,947
<b>Totals, Demand.....</b>	<b>813,131,402</b>	<b>881,561,428</b>	<b>981,399,764</b>	<b>1,081,957,177</b>

## 4.—Operating Statistics of Natural Gas Utilities, 1962-65

Item	1962 <sup>r</sup>	1963	1964 <sup>r</sup>	1965
Daily average sendout.....	Mcf. 2,213,589	2,323,284	2,560,920	2,811,923
Operating revenues.....	\$ 371,883,004	396,536,151	437,885,637	..
Salaries and wages.....	\$ 54,540,602	57,726,901	59,995,223	..
Average annual earnings per employee.....	\$ 5,150	5,288	5,511	..



# CHAPTER XX.—COMMUNICATIONS

## CONSPECTUS

	PAGE		PAGE
SECTION 1. TELECOMMUNICATIONS.....	861	Subsection 4. Federal Government Civil Telecommunications and Electronics Services.....	875
SPECIAL ARTICLE: The Development of Telecommunications in Canada.....	862	Subsection 5. Public and Private Commercial Microwave Facilities.....	879
Subsection 1. Government Control over Telecommunications Agencies.....	869	Subsection 6. Miscellaneous Radio Communication Services.....	881
Subsection 2. Telephone and Telegraph Statistics.....	870	Subsection 7. Radio and Television Broadcasting.....	881
Subsection 3. Overseas Telecommunications Services.....	873	SECTION 2. POSTAL SERVICE.....	889
		SECTION 3. THE PRESS.....	891

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

### Section 1.—Telecommunications\*

Communications media in Canada have been shaped to meet the needs of the country. Great networks of telephone, telegraph, radio and television facilities, inextricably bound together, provide adequate and efficient service which, in this era of electronic advancement, is under continual technological change and development. The familiar challenges of the country—its size, its topography, its climate, its small population—which have reared their heads in other areas of development, have had to be faced as well in the field of communications. That these have been met is evidenced by the fact that today Canada possesses communication facilities and services which are second to none in the world and which are somewhat unique in structure. On the one hand there is a group of telephone companies acting in concert to provide national services and on the other there are two railway companies providing services, each of which is national in scope. All companies provide a most comprehensive total communications network. Television relay, data exchange, telex, conventional telephone and standard telegraph transmission services are all included, intermeshed and intertwined. The two railway companies, one publicly and the other privately owned, are in competition with the private and public telephone groups. This mixture of public and private ownership—all in competition—has served Canada well and may provide a prototype of what might work internationally as well.

All around us massive strides are being made in communications—dramatic progress has established a virtually instantaneous global communications system but the advance has only begun. INTELSAT, the International Telecommunications Satellite Consortium, has opened a fresh approach to the management and development of a world-wide communications system and Canada, as a member of INTELSAT, will play a continuing and influential role in the growth of satellite communications. A proposal recently placed before the Federal Government, spearheaded by a private broadcaster and a space electronics company, put forward a domestic satellite system as the communications vehicle to cover the country from coast to coast and from the border to the Arctic—for message traffic, radio and television—and a commercial communications company, studying the

\* Subsections 1 and 3 to 6 of this Section were revised in the Telecommunications Branch of the Department of Transport, Ottawa; Subsection 2 was revised in the Transportation and Public Utilities Division, Dominion Bureau of Statistics.

opportunities opened by satellite communication, plans to build an earth station in Canada to test the practicality of this concept. The federal Department of Transport is conducting an intensive study designed to ascertain the facts and the implications of this new era of communications, which appear to be without limit.

The development of telecommunications in Canada is outlined in the following special article.

### THE DEVELOPMENT OF TELECOMMUNICATIONS IN CANADA\*

From the dawn of history until a mere 150 years ago, communications over any distance was no faster than physical transportation—about 10 miles an hour. The first significant change occurred about 1800 when visual telegraphs or semaphore stations appeared in North America and Europe. In public demonstrations, signals were transmitted at unbelievable speeds up to 170 miles a minute, although under normal conditions they were much slower.

Electric signal systems introduced a new era of speed and accuracy to most parts of the world and 1837 is perhaps the first important date. In that year, Cooke and Wheatstone invented their Needle Telegraph in England and Samuel Morse invented his famous code and telegraph instrument in the United States. Within 10 years, long-distance electric telegraphy became a reality and by 1866 there were 3,000 telegraph offices spread across North America.

About 1847 the insulation of copper conductors became practical and water, the last great barrier, could be crossed. In 1851, a telegraph cable was laid across the English Channel and men began to think of crossing the Atlantic. After a number of failures, this too was accomplished in 1866 and by 1874 telegraph messages could be sent almost anywhere in the world.

#### Pioneering Telephony in Canada

Meanwhile, scientists in many parts of the world had been trying to transmit speech electrically, usually by trying to adapt telegraphic techniques to the problem. However, the idea for the "membrane speaking telephone" came to Alexander Graham Bell in July 1874, when he was on vacation at his father's home in Brantford, Ontario. The idea was verified experimentally (although accidentally during some experiments on a harmonic telegraph) in Boston in 1876 and patented in 1877. In August of the latter year, two "long-distance" telephone calls were made, each over a distance of about four miles. The first was from Brantford to Mount Pleasant and the second from Brantford to the Bell Homestead. What is generally recognized as the world's first long-distance telephone call was made the following week; it was from Brantford to Paris, Ontario, via Toronto, a distance of 68 miles. These calls were made over the telegraph lines of the Dominion Telegraph Company.

In 1877, the first telephone equipment to be leased in the Commonwealth was used to connect the office of the Prime Minister with that of the Governor General in Ottawa and in the following year the first telephone exchange outside the United States was installed in Hamilton, Ontario. One of the original telephones, in working order and connected to a reproduction of the Hamilton exchange, is preserved in the Bell Telephone Company's "Panorama of Telephone Progress" in Montreal. Also in 1878, the manufacture of telephone equipment commenced in Brantford. Bell assigned the Canadian rights to his patents to his father and in 1880 The Bell Telephone Company of Canada was incorporated. By the end of the year, it had 13 exchanges serving 2,100 telephones and service between cities as far apart as Toronto and Hamilton, etc., was available to the public.

\* Prepared by M. E. Callin, P. Eng., New Products Manager, Switching, Power and Customer Products, Northern Electric Company Limited, Montreal.

## Development of the National System

The inventions of many people in many countries have since contributed to the advancement of telephony and Canada has remained in the forefront in applying these inventions.

In 1900, the common battery system was introduced and began to replace the older magneto systems and also made possible the development of smaller, more attractive and efficient telephone sets. Several automatic switching systems were introduced around the turn of the century with limited success. However, it was not until the early 1920s that satisfactory systems for large offices were installed using the Strowger Step-by-Step system—first invented in 1886. This system became the workhorse of the world and even today serves more subscribers than any other system. But Step-by-Step has its limitations and these became apparent as the Continent moved toward Direct Distance Dialing. The planning of an economical long-distance network entails a choice of routes for a call. There is usually a most direct route, which will be the first choice, backed up by one or more less-direct routes in case the preferred route is busy. In Step-by-Step systems, the digits dialed by the subscriber are used up as fast as he dials them and if the caller ends up being connected to a busy circuit, these digits cannot be retrieved and used to select an alternate route. Another disadvantage with Step-by-Step is that the heavy sliding contacts tend to be noisy, even with the best of maintenance, and the noise level builds up and becomes objectionable as circuits become longer and more switches are added.

In 1950, a new and completely different type of switching system, called Crossbar, was introduced in North America. Instead of the subscriber having direct control over the switches that set up the talking path as in Step-by-Step, the digits dialed by the subscriber are routed to a temporary memory that is a part of the control equipment. This information is retained while other parts of the control equipment search up to five alternate routes to complete a call. The system derives its name from the Crossbar switches used in the talking path. These switches require almost no maintenance and are not as noisy as the older Step-by-Step switches. There is another significant difference—when the call is completed, the information is removed from the temporary memory and the control equipment is ready to serve another subscriber. The control equipment is available to all subscribers and hence Crossbar systems are said to use the "common control" principle.

Crossbar systems were first introduced to Canada for operator-dialing of long-distance calls in 1955 and for subscriber-dialed local calls in 1956 and now have found general application across the country for all sizes of offices. It is undoubtedly true that, without this switching development, Direct Distance Dialing by subscribers across the whole of the Continent could never have become what it is today.

It is equally true, of course, that gigantic strides had to be taken in the development of transmission equipment. Less than 10 years after the first demonstration of the telephone at Brantford, some 3,000 miles of "long-distance" telephone lines were in service and double that mileage in the following five years. This rapid early growth was the result of technological developments which today may seem elementary. New and better telephone transmitters had been developed by 1885 and the same year copper wire was first used instead of iron wire on long-distance lines. A new industry, made possible by intensive research, was being created.

In 1890 the single-wire circuit with ground return was replaced by two-wire circuits and in the following few years the Loading Coil and the Phantom Circuit increased the range and capacity of long-distance networks.

Telephone calls over unlimited distances were made possible only by the invention of the electron tube. In 1915 the first commercial application was made on a transcontinental telephone line in the United States and the same year a combination of telephone and radio facilities was used to transmit speech across the Atlantic. The following year, 1916, the first telephone call between Montreal and Vancouver was made over a combination of Canadian and United States lines. On the Diamond Jubilee of Canada's Confederation in



1927, the Governor General and the Prime Minister were able to talk to Canadians from coast to coast using telephone and telegraph facilities and the trans-Canada radio network. Carrier equipment, which enables more than one conversation to be carried on the same pair of telephone lines, was first used in Canada in 1928. In 1932 the first totally Canadian transcontinental telephone network was opened and the first direct radio telephone link with England was inaugurated.

Although continued refinements were made to this national and international network, the next dramatic changes did not occur until the 1950s. In that decade the first trans-Canada microwave system was built and installed to carry telephone conversations and television programs from coast to coast. Also, the first submarine telephone cable was laid across the Atlantic Ocean, replacing the radiotelephone circuit that had been in use for 25 years.

Thus, by 1960, by keeping pace with technological developments throughout the world and particularly in the United States, Canada had a highly automated national telephone network, fully integrated into the over-all North American network and with excellent connections to other, more distant countries.

### The Telecommunications Team

The national telephone network was not the result of technological development alone but the creation of many men working together in organizations that evolved and adapted themselves to meet changing conditions.

When the telephone industry was first established in Canada in 1877, representatives or agents of many companies were located in towns and cities across the country, sometimes in direct competition with each other in the same city. Then in 1880, as mentioned earlier, The Bell Telephone Company of Canada was organized to consolidate nearly all the telephone business then developing. At first the Bell planned to serve the whole of Canada but problems created by geography and the scattered nature of settlement influenced it to limit operations to Ontario and Quebec. Separate companies developed in British Columbia and the Maritimes and responsibility for providing telephone service in the Prairie Provinces was undertaken by the respective provincial governments. Today there are 2,330 telephone operating companies which differ widely in size and in scope of operations. They range from tiny rural co-operatives serving perhaps a few families to large shareholder-owned and province-owned systems which number their customers in hundreds of thousands. This blend of large and small, private and government ownership is probably unique in the world.

Although there are many companies providing telephone service, each has a monopoly within its own territory. Direct competition was found to be inefficient and had ceased in Canada by 1890 and the operating companies are subject to government regulation at the appropriate level—federal, provincial or municipal.

With so many independent administrations, the need for a new organization to promote co-operation within the industry and the exchange of information about technical and operating procedures became apparent. In 1921 the Telephone Association of Canada (TAC) was formed, its members being the 12 major telephone companies in Canada; this association also works closely with the smaller independent systems. As the barriers of distance were successively overcome, an even more closely knit organization was required to develop and maintain a coast-to-coast long-distance network that would connect to the facilities of the local telephone systems across the country. In 1931, the Trans-Canada Telephone System was established, its members being:—

- The Avalon Telephone Company Limited
- Maritime Telegraph & Telephone Company Limited
- The New Brunswick Telephone Company Limited
- The Bell Telephone Company of Canada
- Manitoba Telephone System
- Saskatchewan Government Telephones
- Alberta Government Telephones
- British Columbia Telephone Company.

In 1949, the Trans-Canada Telephone System acquired a new member, the Canadian Overseas Telecommunication Corporation (COTC), a Crown Corporation established to assume control and operation of all *overseas* communications involving Canada. The COTC operates the Canadian terminals of overseas circuits and is a partner with appropriate foreign administrations in the construction and operation of the necessary transmission facilities such as trans-oceanic cables (see pp. 873-874).

The need for co-operation between operating agencies extends from the national to the international sphere. Following the setting up of the International Telegraph Convention of 1865 and the International Radio Telegraph Convention of 1906, the International Telegraph Union was formed because, in its own words, "telecommunications could span vast distances, but not national boundaries". That Union grew into the International Telecommunication Union (ITU), with headquarters in Geneva, and is the recognized special agency of the United Nations in all matters related to telecommunications.

The Canadian telecommunications industry participates actively in the affairs of the ITU, which include the planned development of international circuits, the study of related technical and operating problems and also assistance to developing countries (see also p. 174). The Telephone Association of Canada and the telecommunications departments of the railways have membership as operating companies. Most of the Canadian manufacturers of telecommunications equipment, in whose laboratories originate the new devices and technology, have joined the ITU as scientific members. This massive contribution from Canadian industry is co-ordinated by the Department of Transport, which is the senior government regulatory body for telecommunications in Canada and is naturally the official voice of Canada in the ratification of international commitments.

In commenting on the people and organizations involved in telecommunications it should be mentioned that the industry, in operating and manufacturing, employs more than 100,000 people and directly supports over 400,000 people, which is about 2 p.c. of the total population of Canada.

### Recent Developments

It is apparent that the rate of telecommunications development has been accelerating, particularly over the past 15 years, and the contributing factors are undoubtedly the increase in population coupled with rising standards of living, the need to communicate leading to the information explosion, and advances in the art of telecommunications itself.

It is interesting to note that many recent technological advances, such as communication via satellites and Pulse Code Modulation, were predicted and reasonably well understood more than 20 years ago but the necessary components were lacking. This situation changed when a completely new generation of components was introduced in the 1950s, stemming from the invention of the transistor at the Bell Laboratories in 1948. At first, transistors were produced as individual components and were smaller, cheaper, more reliable and dissipated less heat than the electron tubes they replaced. But further developments came rapidly as manufacturers around the world saw the many advantages of the new devices. The single transistor gave way to integrated and thin film circuits produced by micro-photography. From a wafer-thin slice of silicon the size of a 25-cent piece, about 600 Monolithic Integrated Circuits can be made, each containing perhaps a hundred components. Theoretically, 9,000 of these components, enough to make a modest computer, could be contained in a thimble. However, the mechanical problems of mounting and connecting the components and allowing for heat dissipation mean that the optimum packing density is beyond reach at the moment. Another point to note is that, contrary to previous experience, integrated circuits have proved to be cheaper and are more reliable than the equivalent individual components.

The economy, reliability and small size of the new solid state devices—and their fast operating times when used in switching applications—have made possible the changes we see around us, from small transistor radios, computers and satellite communications to the less obvious changes in the telecommunications network. Electronic switching systems have now been developed that will eventually supersede Crossbar systems. This new equipment uses the common control technique that was pioneered with Crossbar but the electronic control circuitry is many times faster than the relay type circuits currently in use. Somewhat paradoxically, the increased speed of electronic switching will not directly reduce the time a subscriber needs to reach the party with whom he wishes to talk because, already, calls are connected almost as soon as the originator has finished dialing. But the faster electronic equipment can refer to more information when setting up a call and the memory circuits that store this information will use programmed logic which is easier to change than the wired logic of existing common control systems. It is anticipated that this combination of speed and of a larger, more flexible memory will result in a more personalized form of telephone service. For example, subscribers may be able to reach people they call frequently by dialing only two or three digits instead of seven, or they may be able to arrange for incoming calls to be routed temporarily to another location. These and many more services can be provided in this new age but it is not certain what form these services will take, because no one knows which of the services telephone users will want and be prepared to pay for.

Another benefit to be derived from the increased intelligence of electronic systems and the greater reliability of its solid state components will be an increased ability to take care of its own operation. Already, common control switching systems can isolate and report defective units. A limited amount of extra equipment is supplied so that Crossbar systems can continue to operate unattended for months between visits by a maintenance crew. This trend will be carried further and electronic switching offices will be self-checking and self-repairing to a degree that leads switching engineers to talk of an “immortal machine”.

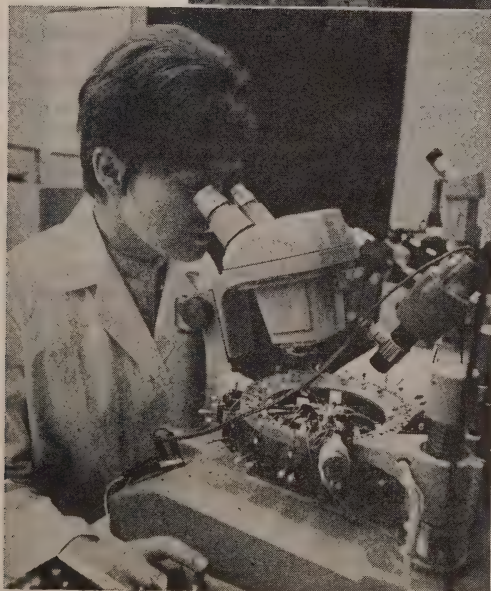
Recent developments in the field of transmission have been equally significant and exciting. Some, such as over-the-horizon radio and satellite communication, have caught the imagination of people everywhere. But they have also shown that radio waves are becoming very congested and that the conservation and efficient use of the available frequency spectrum is a matter demanding international regulation of the highest order. Because of the tremendous demands for frequency bandwidths resulting from the “communications explosion”, two recent innovations may prove to be crucial to the development of telecommunications over the remainder of this century. The first is the reversion to cable. Recent research has led to the evolution of high capacity, high quality, long-haul transmission over co-axial cable that is economical and fully competitive with microwave equipment. The second is more properly an invention—the discovery of the “Laser”. This makes available tremendous bandwidths at the lower end of the light spectrum, i.e., at frequencies far above those used for telecommunications today. In so far as bandwidth is the natural resource used for telecommunication transmission, the invention of the Laser has been compared in significance with the addition of nuclear power to the world's available sources of prime power.

Mention should also be made of a new transmission multiplexing technique, Pulse Code Modulation (PCM), by which a voice circuit is sampled at regular and frequent intervals. Each sample of the signal is then coded in a digital manner similar to a telegraph signal. The coded samples from many voice circuits are then interleaved and transmitted over a single pair of conductors to a distant point, where they are sorted, decoded and the original signals reconstituted. PCM is interesting for many reasons. First, the principles were discovered and disclosed 30 years ago but the practical application was dependent on the developments of solid state devices over the past ten years. Second, it is the first time that digital or telegraphic rather than analog techniques have been used for the transmission of speech. This has the advantage that on long circuits, amplifiers can be used which differentiate between the desired signal and undesired noise and which



The introduction of the Electronic Switching System is the most important technological advance in telephony in Canada since the early 1920s—it not only offers a great variety of new telephone services today but is capable of providing future services not yet dreamed of.

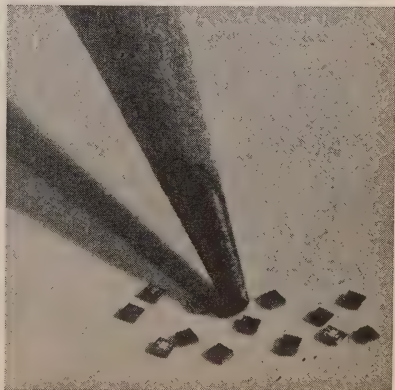
→ technician checks the central control section of the Montreal ESS, which co-ordinates and commands all system operations.



→ A pencil points out the size of these minute circuits.

Miniaturization is of great importance in the design of the System, the space requirement for which is about one fifth that of the replaced system.

← High-power magnification equipment is used to test microcircuits prior to mounting on a 'header'  $\frac{3}{8}$ " in diameter.



will amplify the former and reject the latter. Third, PCM introduces the principle of Time Division Multiplexing as an alternative to Frequency Division Multiplexing. Fourth, and perhaps most important, the rapid sampling of different voice circuits with PCM is really a form of electronic switching. Switching and transmission have now become integrated rather than closely related disciplines.

### Telecommunications in Transition

The previous paragraphs have covered various aspects of the changing role of telecommunications in Canada and elsewhere in the world and indicated that developments are now coming at a prodigious rate. The industry has entered the most dramatic period of transition of its existence, both in its impact on the lives of all of us and in its own composition. It is no longer possible to think of telecommunications merely in terms of telegrams and telephone calls when the existing networks are already carrying data, drawings and television. Telecommunications today must be defined as "the electrical transmission of intelligence" and its potential impact is still a matter of speculation, although recent applications may give some clues.

In our homes and at work we are aware of a more flexible, personalized and capable telephone service and this trend will certainly continue as new developments become available. The transmission of data and pictures is already revolutionizing many aspects of business including inventory control, the scheduling and loading of transportation facilities and discussions between suppliers and customers of technical specifications. Some firms have used private voice-video facilities to conduct personnel interviews where long distances separated the participants. But it may well be that the new telecommunications will have its greatest impact in the field of education. Regular television programs have included educational material for many years and the soundness of the techniques has been demonstrated in many countries. More recently, lectures without pictures were conducted over regular telephone lines and it was found that lecturers and students adapted rapidly to the changed environment. For many subjects the "tele-lecture" has proved to be more effective than one-way television because the student can participate over the telephone circuit. An ambitious Canadian venture in this field is being conducted jointly by the University of Saskatchewan and Saskatchewan Government Telephones. An instructor in Regina lectures in mathematics to classes in several other cities. His notes and sketches are also transmitted via a Visual Electronic Remote Blackboard (VERB) and projected onto screens in the classrooms.

The impact of telecommunications on education will also affect adults. Many jobs are disappearing and people have to be re-trained for completely new work. Other jobs have been altered by technological advances so that the educational requirements to perform the jobs satisfactorily have also changed. This applies not only to professional employment but also to the so-called "unskilled" workers. Although all levels of government are becoming increasingly involved in this type of re-training and education, much of the responsibility for it falls on industry.

Today there is more need for education of all kinds but at the same time there is a shortage of teachers. Telecommunications is one possible solution that has attracted the attention of many companies and individual teachers, scientists and engineers. The man-machine interface is being studied. Even the learning process itself has been re-examined and this has led to programmed learning and teaching machines.

Society's present methods of storing information for reference purposes in libraries, in correspondence files and in technical drawings are also being challenged. What can be stored on paper can also be stored electronically, regardless of whether the information consists of business records or is of a purely educational nature. The combination of modern computers and telecommunications make the storage, retrieval and processing of information at large centralized information centres easy and convenient. Computer time



sharing means that a small business can avail itself of these facilities just as readily as a large business. For example, it is quite conceivable that a dentist in Moose Jaw might use a computer in Regina to maintain his records and send out his bills. Electronic reference libraries will not only provide information, they will also ascertain the inquirer's current level of knowledge and then select the additional information he needs. In other words, the equivalent of the capable assistance of a professional librarian in a large library could be available to a person in a small remote community.

Although it is not possible here to more than suggest some of the effects of the new technology, there is a growing belief that the advances in communications are changing basic living patterns. Professor McLuhan, Director of the University of Toronto's Centre for Culture and Technology, has already attained an international reputation for his analysis and observations on these basic changes. We are all aware that, through television and telecommunications, we are more up to date on events in distant parts of the world, that we are members of a wider community which McLuhan calls living in an "Electronic Village". His epigram that "the medium is the message" is intended to focus attention on the media used for the origination, transmission and display of information in which telecommunications plays an important part.

This closer relationship between the new telecommunications and other technologies and disciplines is most significant. The boundaries between telecommunications and computers and information handling, etc., will become less clearly defined and new companies will challenge the established telecommunication manufacturing and operating companies. The rate of technological advance should further increase as developments in one area of communications stimulate developments elsewhere and the main problem may well be to remain the masters of what we can create.

### Subsection 1.—Government Control over Telecommunications Agencies

Telephone and telegraph companies incorporated under the Federal Parliament are subject to the jurisdiction of the Board of Transport Commissioners in the matter of rates and practices under the provisions of the Railway Act (see pp. 786-787); other companies are responsible to provincial regulatory bodies. International telegraph and telephone communications are handled subject to the International Telecommunication Convention and the Regulations thereunder and/or under regional agreements. Tolls charged to the public for radio communication service are subject to the provisions of the Regulations made under the Radio Act. Overseas cables landed in Canada are subject to the External Submarine Cable Regulations under the Telegraphs Act.

Radio communications in Canada, except for those matters covered by the Broadcasting Act, are regulated under the Radio Act and Regulations and also under the Canada Shipping Act and Ship Station Radio Regulations. In addition, radio communication matters are administered in accordance with the International Telecommunication Convention and Radio Regulations annexed thereto; the International Civil Aviation Convention; the International Convention for the Safety of Life at Sea; the Inter-American Telecommunication Convention and the Convention between Canada and the United States of America relating to the operation by citizens of either country of certain radio equipment or stations in the other country; and also in accordance with such regional agreements as the Agreement between Canada and the United States for the Promotion of Safety on the Great Lakes by Means of Radio, the Agreement between Canada and the United States relating to the Co-ordination and Use of Radio Frequencies Above Thirty Megacycles per Second, the Inter-American Radio Agreement, the North American Regional Broadcasting Agreement, the Canada-USA Television Agreement and the Canada-USA FM Agreement (see also p. 876).



National radio broadcasting in Canada entered its present phase in 1936 when, with the passage of the Canadian Broadcasting Act, the Canadian Broadcasting Corporation replaced the Canadian Radio Broadcasting Commission. The Act gave the Corporation wide powers in the operation of a national broadcasting system and gave to the Minister of Transport the technical control of all broadcasting stations.

During 1958 the Government established a Board of Broadcast Governors and the Canadian Broadcasting Corporation Board of Governors was abolished. The Board of Broadcast Governors regulates the establishment and operation of networks of radio and television broadcasting stations, the activities of public and private broadcasting stations and the relationship between them, in the interest of providing a national broadcasting service of high standard, basically Canadian in content and character. Although the Minister of Transport is the licensing authority under the Radio Act, the Broadcasting Act requires that applications for broadcasting station licences or for any change in an existing broadcasting station be referred to the Board of Broadcast Governors for its recommendation before being dealt with by the Minister. (See also pp. 881-882.)

During 1966 the Government published a White Paper on Broadcasting proposing amending legislation whereby the Board of Broadcast Governors would have full power to issue broadcasting licences, subject only to technical evaluation and certification by the Department of Transport. The proposed new legislation would also provide that community-antenna television systems be treated as components of the national broadcasting system, subject to licensing, regulation and control by the Board of Broadcast Governors.

### Subsection 2.—Telephone and Telegraph Statistics

**Telephone Statistics.**—In 1965 there were 2,374 telephone systems operating in Canada compared with 2,458 in 1964; of these systems 2,330 reported in 1965 and 2,421 in 1964. Co-operative systems in rural districts decreased from 2,144 in 1964 to 2,072 in 1965 and incorporated companies from 174 to 157. The largest of the incorporated companies, The Bell Telephone Company of Canada, which operates throughout the greater part of Ontario and Quebec and in Newfoundland and the Northwest Territories, served 61 p.c. of all the telephones in Canada in both 1964 and 1965 and the British Columbia Telephone Company, also shareholder-owned, served 9.5 p.c. of the total in 1965. The number of telephones in use increased by 65.4 p.c. during the 1956-65 period.

#### 1.—Pole-Line and Wire Mileage and Number of Telephones in Use, 1956-65

NOTE.—Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

Year	Systems	Route Mileage	Length of Wire	Telephones in Use			
				Business	Residential	Total	Per 100 Population
	No.	miles	miles	No.	No.	No.	No.
1956.....	2,661	269,303	16,410,897	1,334,403	3,164,922	4,499,325	28.0
1957.....	2,637	274,334	18,161,444	1,409,446	3,417,689	4,827,135	29.1
1958.....	2,619	280,884	20,250,410	1,486,393	3,631,900	5,118,293	30.0
1959.....	2,605	267,737	22,791,129	1,568,735	3,870,288	5,439,023	31.2
1960.....	2,558	274,855	25,333,802	1,673,915	4,054,252	5,728,167	32.2
1961.....	2,509	303,167	26,986,478	1,723,599	4,284,416	6,014,015	32.6
1962.....	2,430	314,523	28,930,413	1,816,895	4,512,553	6,329,448	33.7
1963.....	2,296	284,202 <sup>1</sup>	31,267,977	1,910,178	4,746,435	6,656,613	34.9
1964.....	2,421	281,036 <sup>1</sup>	33,731,622	2,016,182	5,003,192	7,019,374	36.1
1965.....	2,330	283,478 <sup>1</sup>	36,666,557	2,142,256	5,302,815	7,445,071	38.1

<sup>1</sup> Excludes channel mileages sometimes included in previous years; also, in 1963-65 data were collected for underground cable rather than for underground conduit as previously.

## 2.—Telephones in Use, by Province, 1965

Province or Territory	On Individual Lines		On 2- and 4-Party Lines		On Rural Lines		Public Pay Telephones
	Business	Residential	Business	Residential	Business	Residential	
	No.	No.	No.	No.	No.	No.	
Newfoundland.....	9,343	24,683	1,151	30,479	1	335	645
Prince Edward Island..	2,110	7,679	50	3,068	331	7,430	209
Nova Scotia.....	18,351	97,273	545	17,460	1,070	30,264	3,458
New Brunswick.....	14,127	59,180	668	28,033	974	21,547	2,172
Quebec.....	174,426	861,488	6,189	235,568	13,346	120,917	24,879
Ontario.....	233,609	1,142,295	5,101	409,980	8,208	178,843	26,477
Manitoba.....	31,158	161,558	454	29,402	2,510	37,791	2,719
Saskatchewan.....	29,373	152,357	31	3,354	3,229	58,076	2,710
Alberta.....	54,073	283,737	194	5,240	735	31,543	4,019
British Columbia.....	63,547	148,321	275	246,975	3,249	72,482	5,901
Yukon Territory.....	986	1,069	88	1,224	113	135	55
Northwest Territories..	659	820	162	954	66	391	62
<b>Canada.....</b>	<b>631,762</b>	<b>2,940,460</b>	<b>14,908</b>	<b>1,098,737</b>	<b>33,832</b>	<b>559,754</b>	<b>73,306</b>
	Private Branch Exchange		Extensions		Mobile	Total	Telephones per 100 Population
	Business	Residential	Business	Residential			
	No.	No.	No.	No.			
Newfoundland.....	8,593	—	6,022	6,736	50	88,038	17.6
Prince Edward Island..	2,325	—	1,477	1,805	—	26,484	24.5
Nova Scotia.....	22,554	—	12,288	20,840	—	224,103	29.5
New Brunswick.....	16,318	—	12,783	16,587	798	173,187	27.7
Quebec.....	251,411	19	146,188	219,779	272	2,054,482	36.0
Ontario.....	377,157	103	182,029	359,865	864	2,924,531	42.8
Manitoba.....	38,430	—	20,118	26,804	82	351,026	36.6
Saskatchewan.....	24,144	—	15,123	18,245	168	303,810	31.9
Alberta.....	79,895	—	26,307	51,083	1,530	538,356	37.0
British Columbia.....	84,410	—	52,877	71,731	1,979	751,747	40.5
Yukon Territory.....	241	—	1,188	162	100	5,361	55.7
Northwest Territories..	307	—	377	105	43	3,946	15.2
<b>Canada.....</b>	<b>905,785</b>	<b>122</b>	<b>476,777</b>	<b>793,742</b>	<b>5,886</b>	<b>7,445,071</b>	<b>37.6</b>

The major telephone systems record completed calls on representative days throughout the year and on this basis estimate the number of local conversations which, added to the actual count of long-distance calls, gives their total volume of business. Estimates are included for the smaller systems.

## 3.—Local and Long-Distance Calls and Average Calls per Capita and per Telephone, 1956-65

NOTE.—Figures from 1928 will be found in the corresponding table of previous Year Books beginning with the 1939 edition.

Year	Local Calls	Long-Distance Calls	Total Calls	Total Calls per Capita	Average Calls per Telephone		
					Local	Long-Distance	Total
	'000	'000	'000	No.	No.	No.	No.
1956.....	7,593,525	171,280	7,764,805	486	1,688	38.0	1,726
1957.....	8,077,101	178,608	8,255,709	498	1,673	37.0	1,710
1958.....	8,513,455	194,186	8,707,641	511	1,663	37.9	1,701
1959.....	9,044,825	205,395	9,250,220	530	1,663	37.9	1,701
1960.....	9,364,586	215,275	9,579,861	537	1,635	37.6	1,672
1961.....	10,242,657	226,258	10,468,915	568	1,703	37.6	1,741
1962.....	10,558,129	250,239	10,808,368	576	1,668	40.0	1,708
1963.....	11,035,030	257,548	11,322,578	593	1,662	39.0	1,701
1964.....	11,658,113	281,239	11,939,352	614	1,661	40.1	1,701
1965.....	12,138,243	301,614	12,439,857	628	1,630	40.5	1,671

The steady increases in capitalization, revenue and expenditure of telephone companies together with the figures of number of employees and salaries and wages paid are shown for the years 1956-65 in Table 4. Provincial figures for 1965 are given in Table 5.

#### 4.—Financial Statistics of Telephone Systems, 1956-65

NOTE.—Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

Year	Capital Stock <sup>1</sup>	Long-Term Debt	Cost of Plant	Revenue	Expenditure	Full-Time Employees	Salaries and Wages <sup>2</sup>
	\$	\$	\$	\$	\$	No.	\$
1956.....	549,196,657	583,795,407	1,672,363,570	422,370,206	366,117,634	60,121	193,992,142
1957.....	627,051,991	683,386,827	1,941,591,700	467,701,983	412,158,348	64,074	219,663,002
1958.....	639,824,492	845,613,559	2,202,747,303	507,689,602	451,672,799	61,400	234,298,163
1959.....	730,874,613	916,791,207	2,444,576,788	582,262,550	509,727,426	58,826	240,691,244
1960.....	758,291,439	1,068,399,476	2,692,484,052	627,982,847	549,042,848	57,670	247,128,467
1961.....	879,424,405	1,134,866,419	2,926,527,459	679,305,194	590,428,169	56,322	254,207,734
1962.....	1,012,220,461	1,151,169,891	3,192,229,994	733,294,451	636,542,442	58,091	269,284,720
1963.....	1,207,147,639	1,144,518,306	3,510,479,137	787,374,716	687,272,971	58,416	288,772,585
1964.....	1,328,991,574	1,241,015,012	3,808,675,460	860,207,384	746,503,960	60,829	306,454,089
1965.....	1,380,189,560	1,348,911,971	4,127,386,680	948,177,117	821,204,894	63,467	335,364,967

<sup>1</sup> Includes premium on capital stock.

<sup>2</sup> Full-time and part-time.

#### 5.—Financial Statistics of Telephone Systems, by Province, 1965

Province or Territory	Capital Stock <sup>1</sup>	Cost of Plant	Revenue	Expenditure	Full-Time Employees	Salaries and Wages <sup>2</sup>
	\$	\$	\$	\$	No.	\$
Newfoundland.....	12,850,670	37,370,145	6,043,761	5,793,364	789	3,385,927
Prince Edward Island.....	3,173,047	11,514,623	2,336,450	2,051,705	182	637,853
Nova Scotia.....	37,499,713	114,655,740	24,727,334	21,348,609	2,312	9,168,607
New Brunswick.....	39,804,936	109,778,086	24,526,668	20,974,401	1,681	8,054,238
Quebec <sup>3</sup> .....	1,045,388,458	2,619,734,805	627,144,040	537,255,428	18,372	102,512,760
Ontario <sup>4</sup> .....	17,669,467	74,131,118	19,011,993	14,825,145	20,802	111,651,180
Manitoba.....	—	198,123,433	35,750,060	33,613,230	3,779	17,818,057
Saskatchewan.....	47,423,049	202,216,410	39,777,217	32,886,708	3,146	12,813,221
Alberta.....	3,264,729	311,461,712	65,174,673	63,218,975	5,967	32,166,789
British Columbia.....	173,115,491	448,400,608	103,684,921	89,237,329	6,432	37,107,337
Northwest Territories.....	—	—	—	—	5	48,998
<b>Canada.....</b>	<b>1,380,189,560</b>	<b>4,127,386,680</b>	<b>948,177,117</b>	<b>821,204,894</b>	<b>63,467</b>	<b>335,364,967</b>

<sup>1</sup> Includes premium on capital stock.

<sup>2</sup> Full-time and part-time.

<sup>3</sup> Includes data of The Bell Telephone Company, which operates in Quebec, Ontario, Newfoundland and the Northwest Territories.

<sup>4</sup> Includes data of Northern Telephone Limited, which operates in Ontario and Quebec.

**Telegraph Statistics.**—There were nine telegraph and cable companies operating in Canada during 1965 but, as already stated, telegraph service is provided mainly by the telecommunications departments of the two major railway companies (see also p. 861). The number of telegrams sent continues to decline year by year, giving way to other types of message transmission, but the number of cablegrams sent has been rising. The business of telegraph and cable companies appears to be changing from one of handling messages directly to one of leasing equipment for the transmission of messages by others. Revenues from the latter source have been rising over the past several years and have been the main factor in the steady advance in total operating revenues. Total cost of property and equipment for all telegraph and cable companies was \$447,295,000 in 1965, increasing from \$425,324,144 in 1964.



**6.—Summary Statistics of Canadian Telegraphs, 1956-65**

NOTE.—Figures from 1920 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

Year	Operating Revenues	Operating Expenses	Net Operating Revenue	Pole-Line Mileage	Wire Mileage	Employees <sup>1</sup>	Telegrams	Cable-grams <sup>2</sup>	Money Transfers
	\$	\$	\$	miles	miles	No.	No.	No.	\$
1956....	40,720,213	33,688,888	7,031,325	48,062	442,891	10,833	20,381,641	2,390,376	24,295,308
1957....	44,796,778	39,271,893	5,524,885	48,379	451,669	11,159	19,163,723	2,492,982	25,586,057
1958....	47,633,991	39,908,538	7,725,453	47,495	464,661	10,587	17,296,786	2,398,459	24,434,887
1959....	52,962,913	43,511,666	9,451,247	47,535	486,875	10,586	16,390,997	2,487,358	25,589,067
1960....	58,546,167	45,538,063	13,008,104	48,159	510,640	10,279	15,546,292	2,533,014	25,134,534
1961....	64,053,626	51,735,006	12,318,620	48,675	524,720	9,997	15,138,706	2,662,931	25,041,156
1962....	71,379,074	56,451,679	14,927,395	48,381	534,074	10,069	14,451,416	2,606,103	28,060,157
1963....	73,611,349	60,256,828	13,354,521	49,536	532,551	9,826	13,338,941	2,668,796	30,133,340
1964....	78,743,332	63,865,422	14,877,910	49,730	537,438	9,431	12,946,062	2,751,623	32,378,177
1965....	86,087,398	68,869,393	17,218,005	49,623	544,759	9,270	12,788,585	3,037,939	38,865,118

<sup>1</sup> Excludes commission operators.

<sup>2</sup> Includes wireless messages and transatlantic telex messages.

**Subsection 3.—Overseas Telecommunications Services**

The Canadian Overseas Telecommunication Corporation (COTC) was established in 1950 to maintain and operate external telecommunication services for the conduct of public communications by cable, radiotelegraph and radiotelephone and any other means of telecommunication between Canada and overseas points; to make use of all developments in cable and radio transmission and reception for external telecommunication services; and to conduct investigation and research with the object of improving and co-ordinating such telecommunication services with the telecommunication services of other parts of the Commonwealth. By 1966 the following services had been established: direct telegraph, telephone and telex communications between Canada and Argentina, Australia, Barbados, Bermuda, Brazil, Britain, Denmark, Finland, France, Germany, Iceland, Italy, Jamaica, Japan, the Netherlands, New Zealand, Norway, Sweden and Switzerland. Direct telegraph and telex services are operated with Belgium and Peru and direct telegraph service is operated with the U.S.S.R.

The first transatlantic telephone cable, a joint project with the British Post Office, the American Telephone and Telegraph Company, the Eastern Telephone and Telegraph Company and the Corporation, was brought into service in 1956. Apart from normal use of its systems for public telephone and telegraph message traffic, capacity is available for private leased circuits. International telex service was introduced to Canada the same year and service with 118 countries is available. Since 1961 the following cables have been made available for service: the Canada-Britain 80-circuit telephone cable (CANTAT); the Canada-Greenland-Iceland 24-circuit cable (ICECAN), primarily intended to meet the North Atlantic communication needs of international civil aviation, and its connecting counterpart between Iceland and Scotland (SCOTICE); a four-party project (Canada-Britain-Australia-New Zealand), part of a Commonwealth round-the-world cable system, consisting of a Canada-New Zealand-Australia 80-circuit telephone cable (COMPAC); and the use of a number of circuits for Canadian purposes in a telephone cable system connecting Jamaica and the United States and in a telephone cable system connecting Bermuda and the United States. Additional circuits are being taken up in the latter system for

extension to Tortola and thence by tropospheric scatter systems to various islands in the eastern Caribbean and these will be operational toward the end of 1966. A six-party (Canada-Britain-Australia-New Zealand-Singapore-Federation of Malaysia) project, a section of the Commonwealth round-the-world cable system, will provide, when completed early in 1967, an Australia-New Guinea-North Borneo-Singapore-Malaysia-Hong Kong 80-circuit telephone cable (SEACOM) and will connect with COMPAC.

COTC, under a long-term agreement, has chartered the CCGS *John Cabot*, a combined ice-breaker/cable repair ship, provided for these purposes by the Department of Transport. The ship is to be mainly responsible for the maintenance of all the cables in the western North Atlantic Ocean.

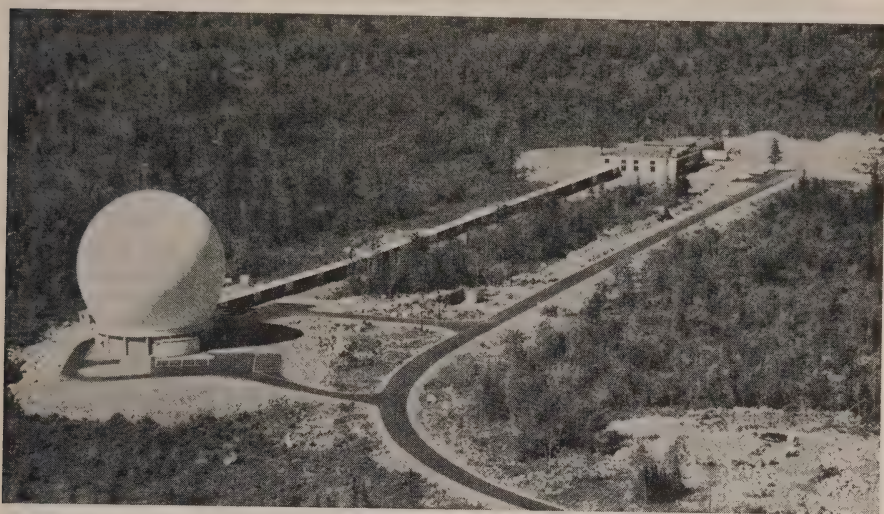
Canada, along with 50 other countries, is a member of the International Telecommunications Satellite Consortium (INTELSAT). This organization is responsible for financing, setting up and operating a global satellite communication system. The COTC is Canada's designated operating entity for this purpose and is represented on the 18-member Interim Communications Satellite Committee (ICSC) which is responsible, on behalf of INTELSAT, for carrying this venture forward. A communications satellite ground station is being constructed near Liverpool, N.S., by the Department of Transport for experimental purposes. It is designed to improve the capability of industry and government in this new field and will be made available to the COTC for its initial direct participation in the commercial satellite system. Exploitation of this new technology, along with continued use of existing submarine cables and other facilities, will make possible an improved global network to meet the ever-increasing demand for overseas communication services, including television relay. A list of the cables landed in Canada is given in Table 7.

7.—External Cables Landed in Canada, 1966

Company and Station	Cables	Nautical Miles
	No.	No.
<b>Canadian Overseas Telecommunication Corporation (COTC)—</b>		
Halifax, N.S. via Azores to Porthcurno, England.....	1	3,078
Port Alberni, B.C. to Sydney, Australia via Hawaii, Fiji Islands and New Zealand.....	1	8,232
Sydney Mines, N.S. via Clarenville, Nfld. to Oban, Scotland <sup>1</sup> .....	1	2,280
Hampden, Nfld. to Oban, Scotland (CANTAT).....	1	2,010
Hampden, Nfld. to Vestmannaeyjar, Iceland via Greenland.....	1	1,657
<b>Western Union International Inc. (WUI)—</b>		
Bay Roberts, Nfld. to Penzance, England.....	4	8,479
Bay Roberts, Nfld. to Hammil, N.Y., U.S.A.....	2	2,778
Bay Roberts, Nfld. to Azores.....	1	1,543
<b>Eastern Telephone and Telegraph Company (ET&amp;T)—</b>		
Sydney Mines, N.S. via Clarenville, Nfld. to Oban, Scotland <sup>1</sup> .....	1	2,280
Sydney Mines, N.S. via Clarenville, Nfld. to Penmarch, France.....	2	2,400
<b>New Brunswick Telephone Company Limited (NBTEL)—</b>		
Campobello Island, N.B. to Lubec, Me., U.S.A.....	1	0.3

<sup>1</sup> Twin cable from Clarenville, Nfld. to Oban, Scotland, and single cable from Clarenville, Nfld. via Terrenceville, Nfld. to Sydney Mines, N.S.; licensed for operation by two carriers—COTC and ET&T.

Increased demand for all types of overseas telecommunication services resulted in the COTC reporting a net profit of over \$2,500,000 for the year ended Mar. 31, 1966. Income for the year amounted to \$17,967,279.



The satellite tracking station at Mill Village on Nova Scotia's south shore is Canada's first link with the global satellite communications network now being established. The rubberized dacron radome protects the giant parabolic reflector antenna which is capable of rotation to any position required to keep orbital satellites within range at all times.

#### **Subsection 4.—Federal Government Civil Telecommunications and Electronics Services**

Radio regulation and radio aids to navigation services are under the jurisdiction of the Telecommunications and Electronics Branch of the Department of Transport. The functions and responsibilities of the Branch may be summarized as follows: (1) administration of the Radio Act and Regulations and the Radio Provisions of the Canada Shipping Act and Ship Station Radio Regulations; (2) research into and development of new and improved communication and electronic equipment and systems needed for aeronautical, marine, meteorological and other services; (3) construction, maintenance and operation of radio aids to marine and air navigation and of radio communication stations including procurement of the necessary equipment; (4) development of policy and plans with respect to international telecommunications by cables, satellites and other media including relations with the Canadian Overseas Telecommunication Corporation; (5) co-ordination of policy governing government use of telecommunication services; (6) administration of the leasing of land-line facilities required for all services of the Department; (7) planning of emergency measures and administration of the Emergency National Telecommunication Organization (ENTO); (8) administration of the Telegraphs Act and the Regulations thereunder covering the licensing of overseas submarine cables; (9) participation in the work of the International Telecommunication Union and its subsidiary organs; and (10) participation in the communication and electronic activities of the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA) and the International Marine Consultative Committee (IMCO).



**Licensing and Regulation of Radio Stations.**—Under the Radio Act and the Canada Shipping Act it is provided that radio stations employing a form of Hertzian wave transmission, including television and radar, be licensed by the Department of Transport, unless otherwise exempted by regulation. Licensing, which provides basic control over the right to establish a radio station, involves the assigning of specific frequencies to each station. Frequencies are assigned to many types of services on a shared non-interference basis. Engineering briefs covering the selection or change of frequency, amount of power and design of the directional antenna system must be approved by the Department of Transport and, before a new broadcasting station can be licensed or before modifications can be made to an existing station, notification is sent to the signatory countries of the North American Regional Broadcasting Agreement, in the case of AM broadcasting stations, and to the United States under the Canada-USA Television Agreement and the Canada-USA FM Agreement, for television and FM broadcasting stations, respectively. The setting of standards for the equipment, installation and operation of a station provides control for efficient use of the radio spectrum. A further control is the requirement that operating personnel be subject to examination and certification.

From time to time the Department of Transport establishes standards governing the technical suitability of radio equipment for licensing in Canada and Radio Standards Specifications and Procedures are issued by the Telecommunications and Electronics Branch in co-ordination with representatives of industry. Before a licence may be issued the radio equipment must comply with the technical requirements of the applicable Radio Standards Specification and be type-approved or declared technically acceptable. Type-approval and technical acceptability briefs may be prepared and submitted by a communications consulting engineer or the necessary tests may be conducted, for a fee, at the Department of Transport Radio Regulations Engineering Laboratory, Ottawa. Over 1,400 units were type-approved or declared technically acceptable during the year ended Mar. 31, 1966.

Eight fixed and one mobile monitoring stations are maintained at suitable points across Canada to observe actual radio spectrum conditions using a variety of modern electronic aids, their purpose being to ensure that radio communications are conducted according to regulatory procedures and to determine causes of harmful interference.

Under the Safety of Life at Sea Convention and the Canada Shipping Act, most passenger ships and larger cargo ships must be fitted with radiotelegraph or radiotelephone equipment, primarily for distress use. Approval is given for each make and model of equipment that meets the required standard and, in addition, the ship station as a whole is inspected after the licence is issued and periodically thereafter. All Canadian and foreign ships are subject to inspection to ensure that they conform to the requirements of the Safety of Life at Sea Convention.

Standards have been developed for the installation of aircraft radio stations specifying the techniques and materials that may be used, and inspections of radio stations aboard civil aircraft of all operational categories are carried out at prescribed periods. In-flight inspections of the radio communications and navigational aspects of proposed new air carrier operations, encompassing both land and oceanic routes, are also made as required.

Marine and aeronautical radio operator standards and related regulations are covered by international agreement. The International Telecommunication Convention prescribes the qualifications for radio operators on mobile radio stations and the regulations made under the Radio Act provide for the examination and certification of operators, both professional and amateur.

*Number of Radio Stations Licensed in Canada.*—The number of licences in force for radio stations in Canada during the year ended Mar. 31, 1966 was 162,840 compared with 136,912 in 1964-65. These figures include stations operated by departments of federal,

provincial and municipal governments, stations on ships and aircraft registered in Canada and mobile stations operating in public and private land mobile services, but do not include private commercial broadcasting licences.

<i>Item</i>	<i>Year Ended—</i>	
	<i>Mar. 31, 1965</i>	<i>Mar. 31, 1966</i>
	<i>No.</i>	<i>No.</i>
New applications received.....	21,141	23,926
Authorizations granted.....	20,930	23,703
Licences cancelled.....	7,195	8,957
Licences renewed.....	89,507	102,586
Amateur licences in force.....	11,293	11,693
General radio service licences in force (issued) <sup>1</sup> .....	36,112	41,534
General radio service licences issued during year (new or renewed)	11,714	19,001
Total licences in force.....	136,912	162,840
Licence amendments.....	15,575	14,487
Certificates of Registration issued to U.S. licensees.....	1,202	2,322
Net increase of licences in force over preceding year.....	18,558	25,928

<sup>1</sup> General radio service licences are valid for a three-year period.

**Investigation and Suppression of Inductive Interference.**—The Radio Act provides penalties for selling or using apparatus liable to cause interference to radio reception. Standards are developed and type approvals issued for certain classes of such equipment. The Telecommunications and Electronics Branch of the Department of Transport also provides a country-wide interference service using special investigation equipment for the purpose of tracing sources of interference and recommending cures for interference to broadcast, television and other radio reception. Seventy-five cars equipped for measuring and locating sources of interference operate from offices located in 30 cities throughout Canada; 17,598 cases were dealt with during the year ended Mar. 31, 1966.

Regulations specifying the limits to be met by particular types of apparatus are contained in the Radio Noise Limits Order and Radio Noise Limits Order Amended. This amendment, introduced on Sept. 24, 1964, designated the limits for noise from television receivers manufactured in Canada or imported into Canada on or after Apr. 1, 1966. Certain low-powered radio transmitting and receiving equipment is exempt from the operation of the Radio Act, e.g., garage door radio controls for a number of models have been exempted and consequently may be operated without the radio station licence otherwise required.

**Meteorological Communications.**—Weather stations operated by the Meteorological Branch of the federal Department of Transport throughout Canada are linked coast-to-coast by means of teletype and, in the remote northern areas, by radio or radio-teletype. The land-line teletype circuits are leased from commercial companies and the radio circuits are operated chiefly by the Telecommunications and Electronics Branch of the Department of Transport.

Weather stations on the teletype network transmit their reports directly; other stations report via commercial telegraph or radio facilities to the nearest station on the teletype line for subsequent transmission on the meteorological circuit. The reports are collected on a regional basis and then relayed to other parts of the country as required. There are two coast-to-coast teletype systems transmitting weather information, with main relay points at Vancouver, Edmonton, Winnipeg, Toronto, Montreal, Halifax, Gander and Goose Bay. These centres handle the distribution of weather information within Canada, including the Arctic, and also effect international exchange with the United States and Europe and, through them, with many other countries. For the latter purpose, the Canadian Meteorological Branch and the British Meteorological Office share the cost of a leased duplex circuit in the transatlantic cable. Altogether, the Meteorological Branch uses 59,700 miles of teletype circuits, connecting 392 teletype offices.

In addition, a facsimile network connects weather offices and includes radio facsimile transmission to Arctic stations and ships at sea. Weather charts originating at the Central Analysis Office and the High Level Forecast Office in Montreal receive national distribution over the network. Charts prepared at the various Weather Central Offices across Canada are transmitted regionally. Altogether, the Meteorological Branch utilizes 13,700 miles of facsimile circuits, serving 86 offices.

**Radio Aids to Marine and Aeronautical Navigation.**—Services of the Telecommunications and Electronics Branch of the Department of Transport in aid of marine and aeronautical navigation are outlined in the following paragraphs; details may be obtained on request from the Department of Transport, Ottawa.

*Marine Navigation.*—Radio aids to marine navigation are provided for radio-equipped Canadian vessels and foreign ships using Canadian waters. This safety and communications service for shipping covers the East and West Coasts, the Great Lakes, the St. Lawrence River and Gulf, Hudson Bay and Hudson Strait and includes regularly broadcast weather reports, storm warnings and notices of dangers to navigation. Ships at sea may obtain medical advice from any coast station. The stations carry out communications by radiotelegraph and /or radiotelephone and most of them provide connections to land telephone lines. Halifax (VCS) and Vancouver (VAI) stations provide a long-range radiotelephone service to ships. Halifax (VCS) and Vancouver (CKN) have radiotelegraph facilities for world-wide communications and participate in the Commonwealth long-range ship communications scheme. Coast stations on Hudson Bay and Hudson Strait, in addition to their regular services, provide commercial communications for posts of the Hudson's Bay Company and various prospecting and development organizations, make weather observations, handle administrative traffic and assist aircraft with information, landing conditions, etc.

Automatic radiobeacon stations are maintained on the East and West Coasts, the St. Lawrence River and Gulf, the Great Lakes and Hudson Bay and Strait, giving navigational aid to mariners by transmitting signals on which bearings may be taken. These stations are arranged, where possible, in groups up to a maximum of six stations transmitting in sequence on a common frequency, the sequence being repeated continually regardless of weather conditions.

*Loran* is a long-range radio aid to marine and air navigation providing accurate fixes at distances up to 750 miles by day and 1,500 miles by night. Two Loran stations operate in Nova Scotia, three in Newfoundland and one on the West Coast. These stations, in conjunction with Loran stations of the United States Coast Guard, give service to ships and aircraft plying the North Atlantic and Pacific Oceans. *Decca* is a short-range radio aid to navigation providing accurate fixes at distances up to 250 miles. Four chains of Decca stations are in operation—the Newfoundland chain, the Nova Scotia chain, the Anticosti chain and the Cabot Strait chain—giving service to ships off Newfoundland and Nova Scotia and in the St. Lawrence River and Gulf.

It has become general practice to equip merchant ships with radar and important buoys are fitted with radar reflectors to increase their radar visibility. Two shore-based radar installations are in operation—one at Camperdown near the mouth of Halifax Harbour and the other on the Lion's Gate Bridge across the entrance to Vancouver Harbour. Low-powered transceivers are provided for use in emergencies at lighthouses, particularly at locations that would otherwise be completely cut off from assistance in case of illness.

*Aeronautical Navigation.\**—Radio aids to air navigation are provided from coast to coast and from the Canada-United States border to the Arctic along and off the airways, and are used by Canadian and foreign air carriers flying over Canadian territory. Six regional offices located at Vancouver, B.C., Edmonton, Alta., Winnipeg, Man., Toronto,

\* See also the item on Air Traffic Control, pp. 850-851.



Ont., Montreal, Que., and Moncton, N.B., carry out the construction and operation of facilities. Low-frequency radio range stations, located approximately every hundred miles along airways, provide specific track guidance to pilots by means of audible signals which may also be used to obtain direction finding bearings. In addition, radiotelephone communications are available between ground and aircraft, by which means pilots may obtain weather data, air traffic control instructions and other information concerning the safety of flights. Forty-eight very high frequency omni-directional ranges (VOR) are in operation, a type of facility that enables the pilot to select any desired course. These omni-directional ranges have permitted the establishment of VOR airways across Canada and on a number of trans-border routes in co-operation with the United States. Additional installations are under construction.

Aeronautical radiobeacon stations provide radio signals with which pilots may use their direction finding equipment to obtain relative directional bearings. Fan markers operating on very high frequencies are usually placed on an airway to inform the pilot when he may safely lose altitude or to indicate accurately the distance from an airport. Station location markers, similar to fan markers, are installed at most radio range sites; they enable a pilot to determine when he is exactly over the station.

Airport and airway surveillance radars (150 nautical-mile) are in operation at 16 airports for air traffic control purposes. Precision approach radars are in operation at seven major airports. Instrument landing systems (ILS) provide radio signals which permit pilots to approach airports for landing during periods of very low visibility. An installation normally consists of a localizer transmitter providing lateral guidance to the runway, a glide path transmitter for slope guidance to the approach end of the runway, two marker transmitters giving distance indications from the runway and a low-power radiobeacon (compass locator) to assist in holding procedures and lining up on the localizer course. Forty-five instrument landing systems are in operation.

Aeronautical radio communications stations are located at strategic points across the country, including the Arctic. These stations, operating for the most part on high frequencies, provide communication with domestic and international air carriers. Thirteen international communications stations, giving coverage from coast to coast and over the oceans, form a major contribution on the part of Canada to international aviation.

### **Subsection 5.—Public and Private Commercial Microwave Facilities**

Canada, because of its population distribution and the vast areas served by microwave communication links, ranks second highest among the world's users of microwave communications systems on a per capita/per mile basis. Increasing demand for television outlets necessitated the extension of microwave routes to provide interconnections for the CBC English, French and private networks and recently these routes have been upgraded to enable the transmission of colour television which started in the autumn of 1966. With the use of more automated equipment by industry and various services, associated data and control information must be transmitted at rapid speeds over microwave radio-relay to widespread areas throughout the country. This Subsection gives a summary of the facilities existing or under construction at the end of March 1966.

**Railways.**—The Telecommunications Departments of the Canadian National and Canadian Pacific Railway Companies have placed in operation a microwave system extending from Montreal to the Pacific Coast, which is used for television, telephone and data relay purposes. They also operate microwave facilities linking the Province of Quebec with the Maritime Provinces and Newfoundland and a major expansion of microwave facilities in Newfoundland has been undertaken by Canadian National Telecommunications (CNT). In addition, CNT has installed a microwave system between Alberta and the Yukon Territory which carries telephone and data traffic and serves both civil and

military organizations in the area. In co-operation with Alberta Government Telephones, a combination microwave and tropospheric scatter system connects Alberta and the Northwest Territories. This system is also intended to provide communication for civil and military use in the Far North. The Quebec North Shore Labrador Railways has developed a microwave system extending into northern Quebec to provide communication for mining operations and to serve some civil communication purposes. Ontario Northland Railways operates a microwave installation connecting northern Ontario and James Bay, also for purposes of military and civil communication. The Pacific and Great Eastern Railway makes extensive use of 6,000 Mc/s microwave facilities linking Vancouver with Prince George and Dawson Creek, B.C.

**Telephones.**—The Trans-Canada Telephone System consists of eight provincial and private systems collectively providing a transcontinental microwave system for the purpose of carrying telephone, television, data and other types of communication services. Extensive microwave systems are utilized within the respective provinces for civil and military communications or television relay purposes. Major expansion has taken place in each province, greatly increasing the number of areas served and system capacity for all types of communication requirements. Tropospheric scatter systems are employed to provide beyond line-of-sight transmissions especially to the Far North areas; these are used for both civil and military applications.

Recently the telephone companies of the three Prairie Provinces announced plans for construction of a major microwave system extending from Winnipeg to Edmonton, to form part of a projected second transcontinental microwave system operated by the telephone companies. The B.C. Telephone Company has installed a major trunk system from Prince Rupert to Prince George which is linked through Prince George with the transcontinental system in the southern part of the province. A microwave system has been built linking Mill Village communication satellite earth station, constructed near Liverpool, N.S. (see p. 875), with the trunk route system of Maritime Telegraph and Telephone Company.

**Television.**—The two main television interests in Canada—the CBC and the CTV Television Network Limited—lease private microwave facilities for the relay of television programs from coast to coast. In addition, studio transmitter links are used by various television stations where the television transmitter is situated some distance from the studio and interconnection is required. In sparsely populated areas, off-the-air pick-up signals from primary television stations are sometimes relayed via microwave to rebroadcasting sites. Microwave facilities are also used in connection with portable and mobile television pick-up where program material is intended for the main studio. Recently, both network facilities and local studio transmitter links have been up-graded to enable the transmission of colour television.

**Industrial.**—Although many firms utilize public communication facilities on a lease basis, some organizations have installed private microwave systems to provide voice, teletype and control data for various purposes. The British Columbia Hydro and Power Authority, the Calgary Power Corporation, The Hydro-Electric Power Commission of Ontario, the Quebec Hydro-Electric Commission and Manitoba Hydro use a considerable number of microwave relay systems for important control and communication purposes. For example, Hydro-Quebec has recently greatly expanded its hydro power-generating capacity and new microwave routes have been added to permit a central control of the various generating stations. The British Columbia Hydro and Power Authority is installing facilities to link the Vancouver area with Peace River, Mica Creek and the Bonneville Power Administration, and also for system control in the Vancouver area.

### Subsection 6.—Miscellaneous Radio Communication Services

In addition to radio communication services provided by the Federal Government, extensive radio communication systems have been established in the provinces, mainly for police, highway and forestry protection purposes. Municipal government departments have steadily increased their use of radio to facilitate operations, particularly as a medium of communication with vehicles—police, fire, engineering, hydro, etc. Such services as taxi, heavy construction, ready-mix concrete, oil pipeline construction and operation, veterinarian and rural medical also make extensive use of radio for communication purposes.

Public utilities, power companies, provincial power commissions, oil exploration and mineral development organizations have expanded considerably their use of radio in both mobile and point-to-point radio fields.

The telephone companies provide an extension of land telephone service, by radio, to suitably equipped vehicles. This service is available in all major cities in Canada and along many of the nation's arterial highways. Restricted common-carrier mobile radio service (this service to vehicles does not permit interconnection with the over-all telephone system but only with specific dispatchers) is available in most major cities in Canada as well as in a number of smaller urban centres. The latter service is provided by telephone companies as well as by other organizations. Low-power radio stations may be licensed to permit short-distance personal and private business radiotelephone communications; more than 41,000 licences were in force on Mar. 31, 1966.

### Subsection 7.—Radio and Television Broadcasting\*

Broadcasting in Canada has developed over a period of some forty-seven years as a combination of public and private enterprise. Since the opening program from the first radio station was beamed into a few Montreal homes in 1918, the role of the radio and television program in the daily life of the Canadian family has grown to startling prominence. Today, radio service reaches 98 p.c. and television service over 92 p.c. of the Canadian population.

To have become such an integral force in the daily life of the nation, broadcasting had to learn the needs of the people and how to serve them. Two 'official' languages forming two distinct cultures had to be served independently but without diminishing the concept of national unity. Dozens of other smaller groups, distinct in culture and frequently dwelling in the same radio or TV coverage area but in separate communities with widely divergent program interests, had to be served. Physical problems of distance and geography had to be overcome. It requires some 360 radio transmitters and 221 TV stations and satellites to reach a population distributed across a 4,000-mile southern frontier, through seven time zones and a variety of topographical and climatic regions, and scattered northwest through thousands of square miles to the shores of the Arctic Ocean. Not only do these people have local service that is a reflection of life in their own districts, but by means of 15,000 miles of land-lines for radio networks and 8,500 miles of microwave circuits for television nearly every Canadian may, at the same time, listen or watch as an event of national interest takes place.

Since 1932, a publicly owned body, now known as the Canadian Broadcasting Corporation, created to develop a national service, has worked with the private or independent station-owner to establish this service. A more recent addition (1958) is the Board of Broadcast Governors, which consists of three full-time members including the chairman and vice-chairman and 12 part-time members; the function of the Board is to "regulate the establishment and operation of networks of broadcasting stations, the activities of public and private broadcasting stations in Canada and the relationship between them, and provide for the final determination of all matters and questions in relation thereto". (See

\* Textual information in this Subsection was revised by the Canadian Broadcasting Corporation, the Board of Broadcast Governors and the Canadian Association of Broadcasters; statistical data were prepared by the Transportation Division of the Dominion Bureau of Statistics.



also pp. 869-870.) The Canadian Broadcasting Corporation consists of a president and a vice-president and nine other directors appointed by the Governor in Council. It is accountable to Parliament through a Cabinet Minister designated by the Governor in Council and is empowered to establish and maintain program networks and stations. (See also pp. 882-886.)

The Broadcasting Act also requires that, before dealing with any application for a licence to establish a broadcasting station (private or public) or for an increase in power, change of frequency or change of location of a broadcasting station, the Minister of Transport must receive a recommendation from the Board of Broadcast Governors. The same requirement exists with respect to the making of a new regulation or changes in the Regulations under the Radio Act which affect broadcasting stations. Before making an appropriate recommendation to the Minister of Transport, the Board considers all such applications at a public hearing at which the applicant, licensees and the Canadian Broadcasting Corporation are given the opportunity of being heard.

Under the provisions of the General Radio Regulations, Part II, made under the Radio Act, the Minister of Transport must also receive a recommendation from the Board before dealing with any application to change the ownership or control of any share of capital stock in the licensee of a broadcasting station which is incorporated as a private company. The Board of Broadcast Governors has established a policy that any such application which would result in a change of ownership or control of a licensee would be referred to a public hearing before a recommendation is made to the Minister. Applications of this kind not involving a change of ownership or control may be dealt with by the Board or the Executive Committee of the Board at a regular meeting.

Under the provisions of the Broadcasting Act, the Board has issued the Radio (AM) Broadcasting Regulations, the Radio (TV) Broadcasting Regulations and the Radio (FM) Broadcasting Regulations.

**Broadcasting Facilities.**—As of Apr. 1, 1966, the CBC had 31 AM broadcasting stations, six FM broadcasting stations, 16 shortwave broadcasting stations, 49 TV broadcasting stations (including satellites) and 141 low-power relay transmitters in operation. On the same date, private companies owned and operated 243 AM broadcasting stations, 59 FM broadcasting stations, six shortwave broadcasting stations and 204 TV broadcasting stations (including satellites). All but 15 of the privately owned television stations and many of the privately owned radio stations are affiliated with the CBC and help to distribute national radio and television services over networks operated by the CBC. Of the 15 unaffiliated private television stations, 11 form The CTV Television Network Limited which commenced operating in the fall of 1961; the other stations, located in Quebec City, Chicoutimi, Hamilton and Montreal, are independent of network affiliation.

Of particular significance for all broadcasters, public and private alike, is the growth in community antenna television systems. These systems, in which the TV receivers of fee-paying subscribers are linked to a common receiving and re-transmission system, make television available to people who could not otherwise receive it and thus, in effect, extend the coverage of existing television stations. The growth of both these systems can have substantial and as yet largely unmeasured effects on television broadcasting itself.

### Operations of the Canadian Broadcasting Corporation, 1965-66

**Television.**—The extension and improvement of the national television service is of continuing concern to the CBC. As of Mar. 31, 1966, about 60 p.c. of the estimated 15,800,000 Canadians who speak English only or are bilingual receive the complete English-language television service through CBC stations; another 33 p.c. receive partial service from privately owned stations of the CBC English television network. There are an estimated 6,230,000 Canadians who speak French only or are bilingual. Complete television service in the French language is available to 64 p.c. through CBC stations and private affiliates provide partial service to an additional 25 p.c.

Much of the population still to be served is in small, scattered communities; approximately 72 of the 2,000 or more areas are outside the national service coverage. To bring television service to these small communities will be both difficult and costly. The Corporation continuously reviews the possibility of establishing adequate service to them and the priority list changes as circumstances change. The main factor in establishing priorities is the per capita cost, other factors being language and geographic locations, particularly the degree of isolation. The Corporation's long-range plan is to provide, as far as practicable, complete CBC national network programming, both television and radio, to all parts of Canada; the immediate goal is to fill in the gaps not now covered by CBC or affiliated stations.

Because of the rapid expansion of television over the past 13 years, CBC facilities in the large centres are dispersed throughout each. To improve efficiency, the Corporation has planned consolidation of facilities in Montreal and Toronto and studies have been made for consolidation at Vancouver, Halifax, Ottawa and Winnipeg, as funds become available. During 1965-66, a new television affiliate at Churchill, Man., was completed. In addition, two new bilingual television stations owned and operated by the Iron Ore Company of Canada were licensed in Labrador City, Nfld., and Schefferville, Que., on condition that they take only CBC programming. This may well establish a new pattern of public-private partnership in bringing television to more remote communities. The CBC also experimented with a simplified TV station package for use in the more remote areas where it is not economical to extend service by normal means; this package, using a low-power transmitter, programmed by videotape alone and operated by one man, would provide service for four or five hours in the evening. English TV network relay stations and rebroadcasting stations commenced service at Deer Lake, Port Rexton, Marystown and Placentia in Newfoundland and at High Prairie in Alberta. CBC affiliate TV network relay and rebroadcasting stations commenced at Murdochville, Mont Blanc, Grande Vallée, Outardes, l'Ance-a-Valleau and Malartic in Quebec; Haliburton, Bancroft and Hearst in Ontario; Meadow Lake in Saskatchewan; and at Hudson Hope, Bullhead Mountain, Bralorne, Cherryville, Hixon, Quesnel, Nass Camp, Juskatla, Port Alice, Camp Woss and Nimpkish in British Columbia.

The establishment of production facilities and associated transmitters has a twofold purpose—through CBC-owned transmitting facilities, the complete national service is made available to the audience and, through the production facilities, the Corporation is able to tap the program resources of the area and thus eventually reflect the area to the remainder of Canada. This enables the CBC to carry out one of its essential functions—that of showing the parts of Canada to each other or, in other words, of reflecting the country to itself.

**Radio.**—The current demand on CBC radio broadcasting is twofold—first, there is the need to bring service to the small percentage of the population now beyond the reach of Canadian radio and, secondly, the need to increase the amount of national service programming distributed by the national radio networks. As of Mar. 31, 1966, about 98 p.e. of the estimated 15,800,000 Canadians who speak English only or are bilingual receive the English-language radio service through CBC stations and private affiliates. Of the estimated 6,230,000 Canadians who speak French only or are bilingual, complete radio service in the French language is available to 5,880,000 or 94 p.e. At present, some 90 areas with a population of 500 or more do not receive adequate CBC national radio network service. During the year ended Mar. 31, 1966, the national radio service was extended through privately owned affiliated stations to Schefferville and Sept Îles in Quebec, Wawa in Ontario, and Duncan in British Columbia.

In radio, an important service is performed by low-power relay transmitters (LPRTs) in the more remote areas of Canada. These are small, unmanned radio transmitters developed by CBC engineers to relay radio network service to listeners where reception is inadequate or non-existent and installation of a manned station is impractical. They broadcast on the standard AM band to small audiences at a low per capita cost. There were 129 LPRTs in operation in 1965-66 and 11 new ones, connected to the English radio network, extended radio service to new areas during the year; the latter are located at Sable River and Larry's River in Nova Scotia, Sept Îles, Port Cartier, Schefferville and Gagnon in Quebec, Kapuskasing and Vermilion Bay in Ontario, Christina Lake and Squamish in British Columbia, and at Fort Simpson in the Northwest Territories. With the extension of separate French and English radio network feeds to Schefferville, the LPRTs at Labrador City and Wabush which previously broadcast bilingual service were connected full time to the French and English radio networks respectively.

The CBC began FM broadcasting in 1947 with stations in Ottawa, Toronto and Montreal, followed in 1948 with a station in Vancouver and a French-language FM station in Montreal. The CBC now has English-language FM stations in Ottawa, Montreal and Toronto—forming a network—plus Vancouver and Winnipeg, serviced by high fidelity tape and disk exchange. In Montreal, where the CBC has two FM stations, the second offers a local service in French. Application has been made to establish and operate a French-language FM station in Vancouver. The CBC FM service emphasizes music but also includes a wide variety of spoken-word material.

*Northern Service.*—Since 1958, the Northern Service has broadcast by shortwave and medium-wave, in two Eskimo dialects and five Indian languages as well as in French and English, to about 75,000 people scattered over approximately 2,000,000 sq. miles. About 75 p.c. of the population is served by the medium-wave community stations which are located at Whitehorse, Y.T., the program centre for the LPRTs of the Yukon network, and Yellowknife, N.W.T., the program centre for the LPRTs of the Mackenzie network. All the radio stations of the Northern Service are connected with CBC national networks "outside" except those at Inuvik, Churchill and Frobisher Bay which receive national service programs on tape and news by shortwave or medium-wave.

The need for a program service to the Far North in French, English and Eskimo was met by eight and a half hours of shortwave broadcasts daily. News and messages on Arctic Patrol began in the Eastern Arctic for the men on the ice-breakers and supply ships. *Northern Messenger*, CBC's most enduring program, was extended to the full year instead of its former winter season.

The Northern Service is concentrating on improving and extending its programs for Indian, Eskimo and métis listeners who are now beginning to share the economic and educational opportunities available to most Canadians. Radio is an ideal means of communication among people lacking a written culture. The Service has made increasing use of Eskimo and Indian languages in local programming to feature reports, discussions and talks on such topics as housing, health, education and employment as well as community news, messages, traditional folklore and music; for instance, broadcasts in Eskimo at Frobisher Bay increased in the past year from one and a half to twenty hours weekly. The Service also broadcasts the weekly *Indian Magazine* in English, for and about Indian people throughout Canada, co-operating with the National Indian Council, the Indian-Eskimo Association, Indian Friendship Centres in cities across Canada, and federal and provincial government departments dealing with Indian affairs. *Churchill Calling* and *Frobisher Calling* are personal radio message services for Eskimos hospitalized in Southern Canada, for Eskimos attending vocational and academic schools and living in hostels and private residences, and northerners of Indian and métis backgrounds.

In the Mackenzie Delta, the Northern Service co-operated with the Indian-Eskimo Association to start a community development program adapting the format of the *National Farm Radio Forum*. The views of the Delta communities on matters of interest and concern to their members are broadcast in Eskimo, Loucheux and English by radio



station CHAK. These people have little or no means of communicating with each other on matters of common interest or of speaking as a group to other parts of Canada. Radio will help remedy this and if the *Community Action Program* succeeds in the Delta it will be started in other places in the North.

**Armed Forces Services.**—In 1965-66, the Armed Forces Services continued to provide Canadian servicemen and their dependants stationed abroad with shortwave news, live network coverage of outstanding national events, tape-recorded network shows, television films for showing in recreation centres and mess halls, and concert parties of outstanding Canadian variety artists. About 84 hours of programs weekly, recorded from the French and English radio networks, were supplied to the Army and Air Force radio stations in Europe, plus two and a half hours of news, sports and topical programming daily by shortwave. The Armed Forces Services arranged network connections from Canada for Christmas and for the Federal Elections, the Grey Cup and Stanley Cup games. The Service also provides a package of about five hours a week on film and kinescope of CBC-TV programs, including hockey and football games, to the Department of National Defence for distribution to remote northern bases such as that at Alert on Ellesmere Island, just 400 miles from the North Pole.

To mark radio station Canadian Army Europe's 10th Anniversary, the CBC produced special programs for broadcast on its networks and the Armed Forces stations overseas. CBC concert parties toured military bases in Canada, Cyprus and the Middle East, resulting in programs for broadcast by the networks as well as entertainment for the troops.

Royal Canadian Navy ships at sea 'broadcast' CBC radio programs over their public-address systems. These are supplied in tape-recorded form by the Armed Forces Service in quantity to the headquarters of the Navy's Atlantic and Pacific commands. Continuing 'banks' of non-topical programs are maintained at the Halifax and Esquimalt Naval Dockyards. As each ship leaves on cruise it draws a supply of CBC programs from the bank which is constantly replenished with new programs.

**International Service.**—In 1965-66 the International Service broadcast in all languages to Europe, Africa, Latin America, the Caribbean, North America, Australia, New Zealand and the South Pacific. The popularity of shortwave listening was measured by the letters and cards received from all over the world by the 3,000 members of the Radio-Canada shortwave club who exchange technical information and who include an increasing number of members in Eastern Europe, and by the 150,000 listeners around the world who get Program Schedules on a regular mailing list four times a year. This success comes despite outdated equipment at the transmitting plant in Sackville, N.B., which has been in use for 21 years and the limitations of which now force the renting of transmitters in Britain for broadcasts to Eastern Europe and Africa. Spoken-word transcriptions in English, French, Spanish and Portuguese, including some on Canadian history that will be published for the Centennial, were very popular. Transcriptions in other languages were also produced; for instance, stations and networks in Germany, Switzerland and Austria used 376 recorded program items in German.

In television, the 15-minute multi-lingual *Canada Magazine* continued and work started on *Expo Minus One* in colour, showing the influence of Expo 67 on Montreal and its environs. The Canadian Centennial and Expo 67 formed the basis of hundreds of broadcast items. In addition, Expo programs in languages not usually included in the Service covered such ceremonies as sod-turning on the sites of the national pavilions of the countries concerned. Regular broadcast programs frequently dealt with international events taking place in Canada, such as the Conference of the Inter-Parliamentary Union in Ottawa and the International Piano Festival in Montreal.

The transcription service marked the 21st anniversary of the International Service in 1966 with the announcement of a Centennial project produced jointly with RCA Victor. This anthology of music by composers and musicians from all parts of Canada was recorded during the year by the International Service for commercial release.

**International Relations.**—The CBC in 1965-66 continued activity in the field of international exchange and export sales of programs. Export sales, although not a major activity because the CBC's main job is broadcasting, have been very successful as have international exchanges. Variety, music, drama, children's, educational and public affairs programs have been sold in many markets, including Britain, Ireland, the United States, Australia, New Zealand, Hungary, Egypt, Italy, Scandinavia, Germany and Malaysia.

Intertel, of which CBC is a founding member, continued production of hour-long documentaries for a world-wide audience of between 40,000,000 and 50,000,000 viewers. Since the founding of the Federation, the CBC has telecast a total of 28 Intertel documentaries.

CBC personnel seconded from their positions in Canada have continued to assist in the development of television and radio broadcasting service in the newly emerging nations of Asia, Africa and the West Indies. Technical and executive staff have been made available to these countries to assess their requirements and advise on the establishment of broadcast service. Much of this work has been undertaken in co-operation with the External Aid Office of the Canadian Government. Trainees have come from Norway, Greece, Pakistan, France, Indonesia, Japan, Burma, Colombia, Sarawak, Morocco, Malaya, Turkey, the West Indies and many other countries for on-the-job training at CBC production points across Canada in various functions applicable to broadcasting—news service, farm and school broadcasts, press relations, financial operations, administration, technical and programming matters, production, audience research and station management.

At the invitation of the Canadian Corporation for the 1967 World Exhibition, Montreal, the Canadian Broadcasting Corporation is constructing, and will staff and operate, an International Broadcasting Centre at Expo 67. Funds for the Centre come from a special Federal Government allocation. The building will include a large and a small television studio, both equipped for colour, and six radio booths. Construction began in April 1965 and should be completed by Jan. 1, 1967. The International Broadcast Centre will be the agency through which broadcasters' program requirements will be met, their questions answered and their locations around the Expo grounds cleared in advance. Although the Centre is planned, staffed and operated by the Corporation on behalf of Expo 67, the CBC networks will share its use with broadcasters of other countries, such as Australia, Japan, Britain and France.

**Finance.**—The CBC, being a Crown corporation, is financed through public funds authorized by Parliament and through commercial advertising. In the year ended Mar. 31, 1966, commercial revenue accounted for about 26 p.c. of the Corporation's income. It is recognized that such revenue cannot be expected to grow significantly beyond this level, since there are no large untapped sources of advertising revenue available to television and the CBC continues to follow a policy whereby certain programs are not available to sponsorship (including news, talks and public affairs, farm and fisheries broadcasts, school broadcasts, religious and institutional broadcasts) and also deliberately restricts the quantity of commercial messages. The Corporation's efforts to increase commercial revenues are at no time allowed to influence its program decisions.

The following statement of operations shows a 7.4-p.c. increase in expenses in 1965-66 over the previous year to the amount of \$133,446,819. Increases for the previous four years were: 1964-65, 7.1 p.c.; 1963-64, 6.5 p.c.; 1962-63, 0.7 p.c.; and 1961-62, 6.6 p.c. The small increase in 1962-63, as compared with other years, was attributable to the austerity program which caused postponement of planned extensions and improvements to the national broadcasting service. The 1965-66 grant of \$97,044,000 voted by Parliament to discharge the responsibilities of the national broadcasting service was under-expended by \$1,981,000.

### 8.—Financial Statement of CBC Operations, Years Ended Mar. 31, 1965 and 1966

Item	1964-65	1965-66
	\$	\$
<b>Expenses—</b>		
Production and Distribution—		
Cost of programs.....	79,618,703	85,656,953
Network distribution.....	10,727,250	11,536,284
Station transmission.....	5,003,930	5,509,995
Payment to private stations.....	4,752,553	4,590,870
Commissions to agencies and networks.....	3,718,955	3,944,840
Emergency broadcasting.....	869,335	857,043
Operational supervision and services.....	10,316,690	11,176,524
Selling and Administration—		
Selling expense.....	1,998,579	2,125,359
Engineering and development.....	1,128,796	1,104,872
Management and central services.....	5,331,629	5,904,756
Interest on loans.....	373,960	1,009,323
<b>Totals, Expenses.....</b>	<b>123,840,350</b>	<b>133,446,819</b>
<b>Income—</b>		
Parliamentary grant.....	85,869,222	94,350,134
Advertising revenue (gross).....	32,871,694	33,562,816
Interest on investments.....	211,584	357,006
Miscellaneous.....	365,669	438,211
<b>Totals, Income.....</b>	<b>119,318,169</b>	<b>128,708,167</b>
Depreciation included with total expenses.....	4,522,211	4,738,652
	<b>123,840,350</b>	<b>133,446,819</b>

### Statistics of the Broadcasting Industry

Financial and other statistics of the radio and television broadcasting industry are obtained by the Dominion Bureau of Statistics in co-operation with the Board of Broadcast Governors and the Department of Transport; summary figures for private and CBC sectors are given in Table 9 for 1963-65.

In 1965, 281 private radio stations and 65 television stations reported to DBS. The operating revenue of the broadcasting industry in 1965 amounted to \$171,600,000, an increase of 11.7 p.c. over the previous year. Of the total, radio broadcasting accounted for \$72,800,000 or 42.4 p.c. and television broadcasting for \$98,800,000 or 57.6 p.c.; in 1964, radio received \$67,200,000 or 43.8 p.c. and television \$86,400,000 or 56.2 p.c. Revenue from network and national advertising represented 62.9 p.c. of the total broadcasting revenue and revenue from local advertising 37.1 p.c.; network and national advertising, and



local advertising increased by 10.3 p.c. and 12.9 p.c., respectively, over 1964; other non-broadcasting revenue increased by 21 p.c. Operating expenses in 1965 at \$249,200,000 were 9 p.c. higher than in 1964. The growth of revenues exceeded the growth of expenses and resulted in an operating profit of \$21,500,000 in 1965 compared with \$15,300,000 in 1964. After adjustment on account of other income and expenses and income taxes, the final net profit of the private sector of the broadcasting industry for 1965 was \$13,942,000 compared with \$10,000,000 in 1964. There are no CBC profits or losses in the figure of net profit because any unexpended balance of the parliamentary grant is treated as an account due to the Government of Canada.

### 9.—Revenue, Expense and Employee Statistics of the Radio and Television Broadcasting Industry, 1963-65

Item	1963		1964		1965	
	Private Stations	CBC	Private Stations	CBC	Private Stations	CBC
	\$	\$	\$	\$	\$	\$
<b>Operating Revenue and Grants</b>						
Broadcasting revenue from network and national advertising.....	58,192,467	21,860,000	69,425,452	23,051,000	78,413,420	23,581,000
Broadcasting revenue from local advertising.....	47,505,252	1,801,000	51,957,524	1,349,000	58,757,439	1,447,000
Non-broadcasting operating revenue.....	6,075,736	785,000	7,222,291	577,000	8,623,933	794,000
Grants received <sup>1</sup> .....	—	82,449,000	—	90,391,000	—	99,089,000
<b>Totals, Operating Revenue and Grants.....</b>	<b>111,773,455</b>	<b>106,895,000</b>	<b>128,605,267</b>	<b>115,368,000</b>	<b>145,794,792</b>	<b>124,911,000</b>
<b>Operating Expenses<sup>2</sup></b>						
Representative agency commissions.....	5,856,156	26,000	6,952,368	53,000	7,379,878	24,000
Interest charges.....	3,111,740	3,000	3,032,855	377,000	2,647,457	1,009,000
Depreciation and amortization of leasehold improvements.....	7,063,202	4,072,000	7,973,337	4,523,000	9,251,532	4,739,000
Rent, repairs and maintenance, insurance, property taxes, fuel and electricity.....	8,963,678	5,866,000	9,700,782	7,179,000	9,897,891	7,016,000
Salaries and wages.....	43,085,037	44,421,000	46,563,657	48,807,000	49,799,400	52,422,000
Staff benefits.....	1,308,215	3,193,000	1,437,515	3,559,000	1,798,836	3,947,000
Artists' and other talent fees.....	4,299,224	13,738,000	4,870,213	13,912,000	5,253,509	13,692,000
Performing rights.....	2,211,263	5,355,000	2,559,323	5,440,000	2,951,057	7,010,000
Telephone and telegraph and outside services.....	6,512,236	11,199,000	7,197,533	11,897,000	8,360,613	12,254,000
Films, tapes, recordings—rental and purchased.....	7,552,277	11,260,000	9,431,869	11,975,000	11,405,955	14,283,000
Advertising, promotion and travel.....	6,326,607	2,015,000	7,085,511	2,189,000	7,749,728	2,856,000
Taxes and licences (other than income or property).....	1,604,131	—	1,682,818	—	1,892,280	25,000
Office and other operating expenses.....	5,119,617	5,747,000	4,771,149	5,457,000	5,890,871	5,634,000
<b>Totals, Operating Expenses...</b>	<b>103,013,383</b>	<b>106,895,000</b>	<b>113,258,930</b>	<b>115,368,000</b>	<b>124,279,007</b>	<b>124,911,000</b>
Net operating income including grants.....	+8,760,072	—	+15,346,337	—	+21,515,785	—
Net of other income and expenses...	+1,381,192	—	+ 634,243	—	+ 613,030	—
Provision for income taxes.....	4,678,968	—	5,978,907	—	8,186,415	—
Net income after taxes.....	+5,462,296	—	+10,001,673	—	+13,942,400	—
Average monthly number of employees.....	8,395	7,765	8,503	8,121	8,945	7,947

<sup>1</sup> The CBC charges its operations with depreciation, but deducts the charge on its published statements; the charge so made has been added to the government grant. <sup>2</sup> Excludes advertising agency commissions, estimated to be \$12,986,238 in 1963, \$14,919,132 in 1964 and \$17,585,786 in 1965.

## Section 2.—Postal Service

The basic tasks of the Canadian Postal Service are to receive, convey and deliver postal matter with speed and security. To carry out these duties, it maintains hundreds of post offices and utilizes air, railway, land and water transportation facilities. In addition, associated functions include the sale of stamps and other articles of postage, the registration of letters and other mail for dispatch, the insuring of parcels, the accounting of COD articles, and the transaction of money order and Post Office Savings Bank business. Because of its transcontinental facilities, the Post Office also assists other government departments with such tasks as selling unemployment insurance stamps, collecting government annuity payments, distributing income tax forms and Public Service employment application forms, and displaying government posters.

Post offices are established wherever the population warrants. Those in rural areas and small urban centres transact all the functions of a city office. In larger urban areas, postal stations and sub-offices have full functions similar to the main post office, including general delivery service, lock-box delivery and letter-carrier delivery.

Much sophisticated automatic equipment has been installed in Canada's larger post offices, which could be described as complex semi-automated plants. Such devices include conveyors and chutes, parcel and bag sorting machines, photo-electric counters, intercom systems, observation gallery telephone systems, and industrial music. Outside the post office building are found such innovations as mailmobiles, automatic stamp vending machines, and curbside plastic mail boxes.

The operating service of the Post Office Department is organized into 14 districts, each under a district director. These district directors and the Postmasters, Toronto and Montreal, report directly to the Assistant Deputy Postmaster General, who has the responsibility of conducting the normal field operations of the Postal Service. The operating and support functions required in the provision of postal service to the public are the responsibility of the local postmasters who receive technical and administrative assistance from district offices at strategic points.

Postal service is provided in Canada from Newfoundland to the west coast of Vancouver Island and from Pelee Island, Ont. (the most southerly inhabited point of Canada), to settlements and missions far into the Arctic. Canada's airmail system provides several transcontinental flights daily, intersected by branch and connecting lines radiating to every quarter and linking up with the United States airmail system. All first-class domestic mail up to and including eight ounces in weight is carried by air between one Canadian point and another, whenever delivery can thus be expedited. Air stage service provides the only means of communication for many areas in the hinterland. There are approximately 46,000 miles of airmail and air stage routes. However, the railways are still the principal means of distant mail transport.

At Mar. 31, 1965 there were 11,255 post offices in operation, distributed provincially as follows: Newfoundland 690, Prince Edward Island 106, Nova Scotia 782, New Brunswick 513, Quebec 2,461, Ontario 2,722, Manitoba 800, Saskatchewan 1,166, Alberta 1,042, British Columbia 909, Yukon Territory 20 and Northwest Territories 44. Letter-carrier delivery, performed in 188 urban centres, employed over 9,000 uniformed carriers. Rural mail routes are generally circular in pattern and average about 26 miles in length. Some 1,169 side services transport mail between post offices, railway stations, steamer wharves and airports, and 1,858 stage services convey mail to and from post offices not located on railway lines. Transportation of mail by motor vehicle on highways is expanding and more than 468 such services were in operation in 1965, many of them replacing or reducing con-

veyance by rail. In 1965 there were 1,042 city mail services transporting mail to and from post offices, postal stations and sub-post offices, collecting mail from street letter-boxes and delivering parcel post. Over 50,000,000 miles are travelled annually on about 9,000 land mail services; both land mail and coastal mail services are performed under contract.

Revenue and expenditure of the Post Office Department for the five years ended Mar. 31, 1961-65 are shown in Table 10; gross revenue receipts are received mainly from postage, either in the form of postage stamps and stamped stationery, or postage meter and postage register machine impressions. Some postage is also paid in cash without stamps, stamped stationery or meter and register impressions. The gross value of the postage stamps and stamped stationery sold during 1964-65 was \$103,893,949, and receipts from postage meter or postage register impressions and postage paid in cash by other means amounted to \$142,685,105.

#### 10.—Revenue and Expenditure of the Post Office Department, Years Ended Mar. 31, 1961-65

NOTE.—Figures from 1868 will be found in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Gross Revenue	Net Revenue <sup>1</sup>	Expenditure <sup>2</sup>	Surplus (+) or Deficit (—)
	\$	\$	\$	\$
1961.....	202,003,790	173,645,658	178,371,716	—4,726,058
1962.....	213,517,994	183,678,936	185,019,700	—1,340,764
1963.....	222,358,848	192,830,859	189,344,410	+3,486,449
1964.....	235,807,940	200,774,264	206,900,000	—37,507,200 <sup>3</sup>
1965.....	263,704,342	230,488,693	210,458,700	—11,479,200 <sup>3</sup>

<sup>1</sup> Gross revenue less commissions and allowances to postmasters and other small items.  
rental of semi-staff and staff post offices.

<sup>2</sup> Excludes

<sup>3</sup> In accordance with new accounting practice.

In the year ended Mar. 31, 1965, post office money orders, issued for any amount not exceeding \$100 and payable in almost any country of the world, were sold at more than 9,137 post offices and money orders payable in Canada only, for amounts not exceeding \$15.99, were sold at some 1,531 additional post offices. Table 11 shows the amount of money order business conducted by the Postal Service in recent years.

#### 11.—Operations of the Money Order System, Years Ended Mar. 31, 1961-65

Year	Money Order Offices in Canada	Money Orders Issued in Canada	Value of Orders Issued in Canada	Value Payable in—		Value of Orders Issued in Other Countries, Payable in Canada
				Canada	Other Countries	
	No.	No.	\$	\$	\$	\$
1961.....	11,098	55,939,421	886,976,976	858,278,412	28,698,563	5,505,224
1962.....	10,708	56,252,265	893,512,291	867,182,785	26,329,506	5,940,795
1963.....	10,679	55,448,076	898,164,577	874,660,765	23,503,811	6,885,116
1964.....	10,690	56,544,267	927,750,738	904,166,425	23,584,313	7,681,041
1965.....	10,668	55,603,081	943,684,714	919,134,578	24,550,136	9,285,388

A statement on the financial business of the Post Office Savings Bank will be found in Chapter XXV on Banking, Other Commercial Finance and Insurance.



### Section 3.—The Press\*

Daily newspapers published in Canada in 1965 numbered 120, counting morning and evening editions separately. They had a reported circulation of about 4,300,000—82 p.c. in English and 18 p.c. in French. Since surveys show that, on the average, a newspaper is read by three persons, it would appear that almost every Canadian who is old enough or literate enough to read examines a Canadian daily on a regular basis. Further, with net advertising revenues in 1964 of \$195,900,000, they far out-sell the 265 private radio stations (\$63,000,000) and the 66 private TV stations (\$58,000,000). Add to this the income from newspaper circulations (\$71,500,000) and it will be seen that Canada's dailies produce almost twice as much revenue as their competitors. The 13 dailies having circulations in excess of 100,000 accounted for over 53 p.c. of the total circulation. French dailies, as would be expected, have their widest circulation in Quebec where 11 of the 13 in existence in 1965 were published. Rural people are the main readers of weekly newspapers, which cater to local interests and exercise an important influence in the areas they serve. It should be mentioned that there are 77 independent ethnic daily or weekly newspapers contributing to Canadian culture and traditions. Published in many languages, often mixed with English, they enjoy a combined paid circulation of about 500,000 and serve 2,000,000 readers.

There are three main newspaper chains in Canada—the Thomson (27 dailies); the Southam (eight dailies); and FP Publications Ltd. (eight dailies). Although largest in numbers, the Thomson papers are smallest in circulation, tending to be small-city papers where the population can sustain only one daily. The Southams control about 20 p.c. of the total daily circulation, FP about 18 p.c. and Thomsons 7 p.c. About 60 p.c. of Canada's daily newspapers are privately owned or independent.

The Canadian Press, a co-operative organization owned and operated by Canada's daily newspapers, provides its 103 members with world and Canadian news and news photographs, mostly by means of teletype and wirephoto transmission. It also serves weekly newspapers and radio and television stations. It is, in effect, a partnership through which each member newspaper provides its fellow members with the news of its particular area and through which the general news of the world is brought to Canada. Cost of editing and transmission is divided among members according to the population of the cities in which they publish. CP gets world news from Reuters, the British agency, and from the Associated Press, the United States co-operative, and these agencies have reciprocal arrangements with CP for their coverage of Canada. CP now maintains a French-language service in Quebec which originates stories in French for the French-language press. For national distribution, news originating in Quebec in French is translated into English.

The United Press International of Canada is a limited company which is associated with the United Press International World Service of which it is an affiliate. From its headquarters in Montreal, it provides Canadian and international news and pictures to over 90 subscribers in Canada as well as being the outlet of Canadian news and pictures for world distribution through United Press International facilities. Agence France Presse maintains offices in Montreal and Ottawa and certain foreign newspapers have agencies in Ottawa to interpret Canadian news for their readers.

**Press Statistics.**—The following tables are based on data estimated from *Canadian Advertising*. Circulation figures are given for daily English-language and French-language newspapers only. Such circulation figures are relatively easy to obtain because, in their own interest, newspapers qualify for and subscribe to the Audit Bureau of Circulation; for these, ABC 'net paid' figures have been used. On the other hand, circulation data for foreign-language newspapers, weekly newspapers, weekend newspapers and magazines are incomplete and therefore not usable.

\* The introduction to this Section contains certain statements appearing in an article by Stuart Keate, Honorary President of The Canadian Press, published in *Press Journal*.

An article in the 1957-58 Year Book traces developments in Canadian journalism from their beginnings in 1752 to (circa) 1900. A second article appearing in the 1959 edition brings that account up to 1958.



**13.—Estimated Numbers and Circulations of reporting English-Language and French-Language Newspapers Published in Urban Centres of Over 30,000 Population, 1964 and 1965—concluded.**

Urban Centre	Households (Census 1961)	1964			1965		
		Daily		Weekly	Daily		Weekly
		No.	No.	Circulation	No.	No.	Circulation
ENGLISH-LANGUAGE NEWSPAPERS—concluded							
Fort William, Ont.....	11,695	1	15,960	—	1	16,359	—
Granby, Que.....	7,478	—	—	1	—	—	1
Guelph, Ont.....	10,773	2	18,253	—	1	15,330	—
Halifax, N.S.....	21,501	2	112,196	1	2	113,228	1
Kingston, Ont.....	73,829	1	114,193	2	1	116,923	2
Kitchener, Ont.....	13,931	1	23,555	1 <sup>1</sup>	1	24,633	1 <sup>1</sup>
Lethbridge, Alta.....	20,600	1	40,942	—	1	43,244	—
London, Ont.....	10,013	1	18,661	—	1	18,784	—
Moncton, N.B.....	47,498	2	117,527	—	2	121,772	—
Montreal, Que.....	10,529	2	27,867	—	2	29,095	—
Moose Jaw, Sask.....	330,023	2	334,419	2 <sup>2</sup>	2	324,454	2 <sup>2</sup>
New Westminster, B.C.....	9,562	1	8,702	—	1	8,907	—
Oshawa, Ont.....	9,218	1	18,615	—	1	18,502	—
Ottawa, Ont.....	17,133	1	19,897	—	1	21,131	—
Peterborough, Ont.....	70,114	2	141,990	1	2	148,175	1
Port Arthur, Ont.....	12,853	1	23,632	1	1	24,789	1
Quebec, Que.....	11,609	1	14,890	—	1	15,006	—
Regina, Sask.....	42,126	1	5,392	—	1	5,088	—
St. Catharines, Ont.....	30,125	1	61,086	—	1	61,217	—
St. James, Man.....	23,287	1	29,185	—	1	30,542	—
St. John's, Nfld.....	9,076	—	—	1	—	—	1
Saint John, N.B.....	12,971	2	23,137	1 <sup>1</sup>	2	22,672	1 <sup>1</sup>
Sarnia, Ont.....	14,423	2	47,930	1	2	49,323	1
Saskatoon, Sask.....	13,710	1	16,788	1	1	16,437	1
Sault Ste. Marie, Ont.....	25,912	1	43,398	—	1	43,976	—
Shawinigan, Que.....	11,054	1	18,822	—	1	19,012	—
Sherbrooke, Que.....	7,232	—	—	1	—	—	1
Sudbury, Ont.....	15,775	1	8,847	1	1	8,703	—
Sydney, N.S.....	19,526	1	30,278	1	1	30,195	1
Toronto, Ont.....	7,500	1	27,111	1	1	27,136	1
Trois-Rivières, Que.....	172,864	4	779,641	15 <sup>3</sup>	4	777,074	14 <sup>3</sup>
Vancouver, B.C.....	12,372	—	—	1	—	—	1
Victoria, B.C.....	118,405	3	386,968	4	2	346,545	4
Welland, Ont.....	18,475	2	59,980	3	2	62,347	2
Windsor, Ont.....	9,428	1	17,801	—	1	18,303	—
Winnipeg, Man.....	33,060	1	79,700	1	1	81,077	—
	74,126	2	201,461	2	2	203,460	2
FRENCH-LANGUAGE NEWSPAPERS							
Chicoutimi, Que.....	5,786	—	—	3 <sup>2</sup>	—	—	2
Chomedey, Que.....	6,995	—	—	2 <sup>4</sup>	—	—	—
Cornwall, Ont.....	10,753	—	—	1	—	—	1
Edmonton, Alta.....	76,275	—	—	1	—	—	1
Granby, Que.....	7,478	1	9,665	1	1	11,275	1
Hull, Que.....	13,304	—	—	2 <sup>2</sup>	—	—	2 <sup>2</sup>
Jacques Cartier, Que.....	8,565	—	—	1 <sup>4</sup>	—	—	1 <sup>4</sup>
Lachine, Que.....	10,058	—	—	1 <sup>4</sup>	—	—	1 <sup>4</sup>
LaSalle, Que.....	8,128	—	—	1 <sup>4</sup>	—	—	1 <sup>4</sup>
London, Ont.....	47,498	—	—	1 <sup>4</sup>	—	—	1 <sup>4</sup>
Moncton, N.B.....	10,529	1	10,057	—	1	10,146	—
Montreal, Que.....	330,023	5	539,727	26 <sup>5</sup>	5	415,797	27 <sup>6</sup>
Ottawa, Ont.....	70,114	1	34,674	—	—	36,649	—
Quebec, Que.....	42,126	3	187,050	3 <sup>2</sup>	3	191,204	3 <sup>2</sup>
St. Boniface, Man.....	9,561	—	—	1	—	—	1
St. Laurent, Que.....	12,306	—	—	1	—	—	1
Shawinigan, Que.....	7,232	—	—	5	—	—	5
Sherbrooke, Que.....	15,775	1	42,675	1	1	42,504	1
Sudbury, Ont.....	19,526	—	—	2	—	—	2
Trois-Rivières, Que.....	12,372	1	41,494	4	1	43,178	3

<sup>1</sup> Weekend newspaper.<sup>2</sup> Includes one weekend newspaper.<sup>4</sup> Bilingual.<sup>5</sup> Includes 12 bilingual and 13 weekend newspapers.<sup>3</sup> Includes four weekend newspapers.<sup>6</sup> Includes 12 bilingual and 14 weekend



## 14.—Estimated Numbers of Foreign-Language Publications, 1964 and 1965

Language	1964	1965	Language	1964	1965
	No.	No.		No.	No.
Byelorussian.....	1	1	Lithuanian.....	3	3
Chinese.....	4	4	Macedonian.....	1	1
Croat.....	3	3	Maltese.....	1	—
Czech.....	2	2	Norwegian.....	1	1
Danish.....	2	1	Polish.....	3	3
Dutch.....	8	8	Portuguese.....	3	4
Estonian.....	2	2	Russian.....	1	—
Finnish.....	2	2	Serbian.....	3	3
German.....	9	10	Slovak.....	2	2
Greek.....	4	4	Slovenian.....	1	1
Hungarian.....	8	8	Swedish.....	3	3
Icelandic.....	1	1	Ukrainian.....	18	18
Italian.....	11	11	Yiddish.....	4	4
Japanese.....	2	2			
Latvian.....	1	1	<b>Totals.....</b>	<b>104</b>	<b>103</b>

## 15.—Estimated Numbers of Magazines and Related Publications, by Broad Classifications, 1964 and 1965

Classification	1964*	1965	Classification	1964*	1965
	No.	No.		No.	No.
Agricultural and rural.....	58	59	Religious.....	37	37
Construction.....	23	24	Services and directories.....	89	97
Educational.....	105	105	Sports and entertainment.....	72	77
Finance and insurance.....	13	14	Trade, industry and related publications.....	197	207
Government and government services.....	28	28	Transportation and travel.....	42	44
Home, social and welfare.....	44	47	Miscellaneous.....	23	26
Labour.....	14	15			
Pharmaceutical, medical, dental and nursing.....	59	62	<b>Totals.....</b>	<b>824</b>	<b>864</b>
Professions (engineering, architecture, law, accountancy, photography, etc.).....	20	22			

**Revenue from Printing and Publishing.**—One of the industrial groups for which information is collected by the DBS in its annual Census of Manufactures is the printing, publishing and allied industries group which includes establishments engaged primarily in the publishing and printing of newspapers, magazines, periodicals, books, almanacs, maps, guides and the like, as well as establishments printing such publications for publishers, publishing firms that do no printing, and engraving, stereotyping and allied industries. Of interest in connection with press statistics is the amount of revenue received by these industries from advertising and from subscriptions or sales, which is given for the years 1963 and 1964 in Table 16. Additional data on manufacturing activity of this industrial group are included in Chapter XVI on Manufactures.

**16.—Revenue from Advertising and from Subscriptions or Sales of Newspapers, Periodicals and Books, 1963 and 1964**

Classes	1963			1964		
	Net Revenue <sup>1</sup> from—			Net Revenue <sup>1</sup> from—		
	Adver- tising	Subscrip- tions and Sales	Total	Adver- tising	Subscrip- tions and Sales	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Newspapers and Periodicals—</b>						
Newspapers, daily.....	187,619	67,460	255,079	195,894	71,520	267,414
Retail.....	96,419	...	...	101,654	...	...
Classified.....	40,074	...	...	43,164	...	...
National.....	51,126	...	...	51,076	...	...
Newspapers, national weekend.....	17,039	9,466	26,506	15,708	8,021	23,729
Local.....	2,412	...	...	1,864	...	...
National.....	14,627	...	...	13,844	...	...
Newspapers, weekly, semi-weekly, tri-weekly, etc.....	24,879	5,740	30,618	28,483	6,301	34,784
Local.....	19,215	...	...	21,430	...	...
National.....	5,664	...	...	7,053	...	...
Controlled distribution weekly newspapers....	697	22	719	922	76	998
Local.....	635	...	...	855	...	...
National.....	62	...	...	68	...	...
Magazines of general circulation.....	17,320	8,122	25,442	17,818	8,748	26,566
Telephone and city directories <sup>2</sup> .....	432	1,790	2,221	440	1,982	2,423
Trade, technical, professional and financial pub- lications.....	24,933	5,561	30,494	26,400	6,825	33,224
Agricultural publications.....	5,617	942	6,559	5,551	949	6,501
Religious publications.....	338	4,046	4,384	463	3,250	3,714
School and collegiate publications.....	44	1,138	1,182	50	826	877
Fraternal publications.....	402	402	804	375	418	794
Juvenile publications.....	29	480	508	31	378	409
All other periodicals.....	1,485	1,838	3,323	1,424	2,669	4,093
<b>Totals, Newspapers and Periodicals.....</b>	<b>280,832</b>	<b>107,006</b>	<b>387,838</b>	<b>293,561</b>	<b>111,962</b>	<b>405,523</b>
<b>Books—</b>						
Books published and printed.....	...	9,796	9,796	...	10,941	10,941
Books published only.....	...	17,626	17,626	...	19,620	19,620
<b>Totals, Books.....</b>	<b>...</b>	<b>27,422</b>	<b>27,422</b>	<b>...</b>	<b>30,561</b>	<b>30,561</b>

<sup>1</sup> Net revenue from advertising excludes commissions paid to recognized advertising agencies and all cash discounts; net revenue from subscriptions and sales excludes commissions paid to indirectly employed sales agents who are not regular employees.

<sup>2</sup> Excludes telephone directories published by telephone companies.

# CHAPTER XXI.—DOMESTIC TRADE AND PRICES

## CONSPECTUS

	PAGE		PAGE
<b>Part I.—The Movement and Marketing of Commodities.....</b>	896	<b>Part II.—Government Aids to and Control of Domestic Trade.....</b>	923
SECTION 1. MERCHANDISING AND SERVICE ESTABLISHMENTS.....	896	SECTION 1. CONTROLS AFFECTING THE MARKETING OF FARM PRODUCTS.....	923
Subsection 1. 1961 Census of Merchandising and Service Establishments.....	897	Subsection 1. Control of the Grain Trade	923
Subsection 2. Intercensal Surveys of Wholesale, Retail and Service Establishments.....	902	Subsection 2. Controls Over Farm Products Other Than Grain.....	925
SECTION 2. THE MARKETING OF AGRICULTURAL PRODUCTS.....	908	SECTION 2. COMBINATIONS IN RESTRAINT OF TRADE.....	928
Subsection 1. The Grain Trade, 1964-65	908	SECTION 3. CONTROL AND SALE OF ALCOHOLIC BEVERAGES.....	930
Subsection 2. Livestock Marketings.....	914	SECTION 4. MISCELLANEOUS AIDS OR CONTROLS.....	932
SECTION 3. STORAGE AND WAREHOUSING...	916	<b>Part III.—Bankruptcies and Commercial Failures.....</b>	937
SECTION 4. CO-OPERATIVE ORGANIZATIONS.	918	<b>Part IV.—Prices.....</b>	941
SECTION 5. INTERPROVINCIAL FREIGHT MOVEMENTS.....	920	SECTION 1. INDEX NUMBERS OF WHOLESALE PRICES.....	941
		SECTION 2. CONSUMER PRICE INDEX.....	944
		SECTION 3. CONSUMER EXPENDITURE.....	947
		SECTION 4. SECURITY PRICE INDEXES.....	950

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

## PART I.—THE MOVEMENT AND MARKETING OF COMMODITIES

Domestic trade is broad and complicated; it encompasses all values added to commodities traded, provincially and interprovincially, by agencies and services connected with the storage, distribution and sale of goods, such as railways, steamships, warehouses, wholesale and retail stores, financial institutions, etc. Taken in a wide sense, it embraces various professional and personal services, including amusement services such as theatres and sports. Only certain phases of this broad field are covered here and, wherever possible, cross references are given to related material appearing in other Chapters. The arrangement of material in a volume such as the Year Book is governed by the necessity of interpretation from various angles. The Index will be found useful in this respect.

### Section 1.—Merchandising and Service Establishments\*

The surveys of merchandising and service establishments centre around a census of such business establishments. The first census of this kind related to business transacted for the year 1930 and similar censuses were taken for 1941, 1951 and 1961. The 1961 census, however, collected a wider range of data than the previous censuses; gross margin

\* Prepared in the Merchandising and Services Division, Dominion Bureau of Statistics.



information was collected from retail stores and wholesalers, operating expense figures were collected from wholesalers and service businesses, and more information was sought about the operating characteristics of retailers and wholesalers. Detailed results are given in the census reports,\* and some elaborative data, additional to that contained in previous editions of the Year Book, are given in Subsection 1 following.

Each census of merchandising and service establishments forms a new base for intercensal monthly, quarterly and annual surveys, which are sample surveys for some businesses and full coverage for others. Because of the need for more frequent survey bases, it was considered advisable to take a less detailed census every five years instead of every ten, and to place more emphasis on the sample surveys during the intercensal period for the collection of detail such as commodity content of sales to retailers, gross margin data and the analysis of sales by type of buyer. The first quinquennial census was taken in 1966, data from which will become available about mid-1968. Subsection 2 of this Section contains current intercensal information on the distributive trades and continues to project the 1951 base; data related to the 1961 base will be available in 1967.

### Subsection 1.—1961 Census of Merchandising and Service Establishments

As stated above, this Subsection contains certain elaborative information relating to wholesale, retail and service establishments, which supplements summary data given in previous editions of the Year Book and available from census publications.

Table 1 summarizes operating results of selected wholesale trades for incorporated companies in various types of operation. The results give, as a percentage of sales, the gross margin, total operating expenses and a breakdown of expenses into selling, warehouse and delivery, general and administrative and other operating expense.

\*Vol. VI (Pt. 1) Census of Merchandising: Retail Trade (Series 6.1). Vol. VI (Pt. 2) Census of Merchandising: Wholesale Trade; Services (Series 6.2). Special subjects series.

#### 1.—Operating Results of Selected Trades for Incorporated Wholesale Establishments, as Percentages of Sales, by Type of Operation and Kind of Business, Census 1961

Type of Operation and Kind of Business	Gross Profit	Expenses				
		Selling	Ware- house and Delivery	General and Admini- strative	Other	Total
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
<b>Co-operative Marketing Associations and Other Dealers in Primary Products—</b>						
Grain.....	2.13	0.10	0.15	0.85	0.05	1.15
Livestock.....	1.43	0.45	0.10	0.66	0.01	1.22
<b>Wholesale Merchants—</b>						
Automotive parts and accessories.....	28.77	7.21	6.23	10.59	0.86	24.89
Motor vehicles.....	14.00	4.20	2.80	5.44	0.11	12.55
Industrial chemicals.....	14.49	4.83	2.29	5.21	0.28	12.61
Drugs and drug sundries (general line).....	12.82	1.70	3.52	5.28	0.03	10.53
Clothing and/or furnishings (general line).....	15.17	3.79	2.45	6.73	0.20	13.17
Dry goods (general line).....	17.44	5.03	3.26	6.97	0.37	15.63
Piece goods.....	13.90	3.60	1.16	6.01	0.14	10.91
Electrical merchandise (general line).....	19.47	4.95	2.83	8.64	0.05	16.47
Electrical wiring supplies and construction materials.....	17.57	5.23	2.00	7.49	0.10	14.82
Grain.....	1.51	0.07	0.06	0.56	—	0.69
Livestock.....	12.55	0.99	6.68	3.77	0.06	11.50
Feed, hay and grain.....	14.79	2.86	4.56	5.28	0.23	12.96
Cigars, cigarettes and tobacco.....	6.53	1.83	1.52	2.42	0.03	5.80
Fruits and vegetables (general line).....	13.35	1.96	5.09	4.53	0.05	11.63
Meats and meat products.....	8.80	1.21	3.26	2.99	0.23	7.69
Produce.....	11.53	3.26	2.78	4.41	0.10	10.55
General merchandise.....	18.47	5.47	3.02	7.44	0.16	16.09
Groceries (general line).....	6.92	1.06	2.09	2.87	0.07	6.09
Hardware (general line).....	18.11	5.13	3.86	8.48	0.19	17.66
Building materials (general line).....	22.29	4.43	4.88	8.51	0.34	18.16

**1.—Operating Results of Selected Trades for Incorporated Wholesale Establishments, as Percentages of Sales, by Type of Operation and Kind of Business, Census 1961—concluded**

Type of Operation and Kind of Business	Gross Profit	Expenses				
		Selling	Ware-house and Delivery	General and Administrative	Other	Total
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
<b>Wholesale Merchants—concluded</b>						
Lumber.....	12.58	2.44	2.98	5.42	0.29	11.13
Lumber and millwork.....	20.95	4.04	5.57	8.12	0.25	17.98
Construction machinery and equipment.....	23.65	6.92	4.34	9.77	0.27	21.30
Farm machinery and equipment.....	19.12	5.81	2.91	8.27	0.27	17.26
Industrial machinery, equipment and supplies (general line).....	23.39	6.91	3.58	10.88	0.19	21.56
Iron and steel (general line).....	15.01	2.16	2.52	7.75	0.32	12.75
Paper and paper products (general line).....	17.94	5.18	3.25	6.56	0.04	15.03
Plumbing equipment and supplies.....	17.71	4.59	2.93	7.87	0.41	15.80
Plumbing and heating equipment and supplies (general line).....	18.37	4.01	3.33	8.17	0.33	15.84
<b>Agents and Brokers—</b>						
Clothing and/or furnishings (general line).....	4.89	2.56	0.05	1.41	0.20	4.22
Piece goods.....	3.65	1.79	0.00	1.32	0.01	3.12
Livestock.....	1.47	0.35	0.20	0.69	0.01	1.25
Lumber.....	3.87	1.62	—	2.09	—	3.71
Structural steel.....	0.93	0.70	—	0.12	0.01	0.83
<b>Manufacturers' Sales Branches—</b>						
Meats and meat products.....	..	1.57	2.09	2.29	0.04	5.99
Produce.....	..	1.20	2.98	1.78	—	5.96
Lumber.....	..	0.93	0.42	2.30	0.04	3.69
Lumber and millwork.....	..	1.57	1.84	2.96	0.01	6.38
Farm machinery.....	..	3.75	1.86	8.25	0.04	13.90
Plumbing equipment and supplies.....	..	2.94	3.43	5.12	0.50	11.99

Table 2 shows gross profit ratio (percentage of net sales) of a panel of reporting retail establishments for the census year 1961.

**2.—Gross Profit Ratio of a Panel of Reporting Retail Establishments, by Kind of Business, Census 1961**  
(Percentage of net sales)

Kind of Business	Gross Profit	Kind of Business	Gross Profit
	p.c.		p.c.
<b>Food.....</b>	<b>18.0</b>	<b>Automotive—concluded</b>	
Candy, nut stores.....	41.6	Service stations.....	23.1
Confectionery stores.....	20.5	Garages.....	37.1
Fruit and vegetable stores.....	19.8	Paint and body shops.....	56.4
Grocery stores without fresh meat.....	15.6	Other specialty repair shops.....	51.1
Combination stores (grocery stores with fresh meat).....	17.7	Car wash.....	79.6
Meat markets.....	20.0	<b>Apparel and Accessories.....</b>	<b>33.5</b>
Fish markets.....	27.9	Men's and boys' clothing stores.....	33.5
Delicatessen stores.....	27.2	Men's and boys' furnishings stores.....	32.7
<b>General Merchandise.....</b>	<b>31.3</b>	Men's and boys' hat stores.....	39.4
Department stores.....	33.0	Women's ready-to-wear stores.....	33.2
General merchandise stores.....	30.0	Lingerie and hosiery stores.....	33.6
General stores.....	17.0	Furriers and fur stores.....	40.9
Variety stores.....	34.5	Accessories and other apparel stores.....	31.3
<b>Automotive.....</b>	<b>21.0</b>	Children's and infants' wear stores.....	30.6
Automobile dealers.....	15.9	Family clothing and furnishings stores.....	30.4
Automobile dealers with wholesale car departments.....	14.8	Men's shoe stores.....	37.0
Automobile dealers with farm implements.....	14.5	Women's shoe stores.....	34.8
Used car dealers.....	17.9	Children's and infants' shoe stores.....	36.1
Accessories, tire and battery shops.....	30.6	Family shoe stores.....	34.1
		Custom tailors.....	52.1
		Second-hand clothing stores.....	28.6
		Piece goods stores.....	31.0

## 2.—Gross Profit Ratio of a Panel of Reporting Retail Establishments, by Kind of Business, Census 1961—concluded

Kind of Business	Gross Profit	Kind of Business	Gross Profit
	p.c.		p.c.
<b>Hardware and Home Furnishings</b> .....	<b>31.7</b>	<b>Other Retail Stores—concluded</b>	
Hardware stores.....	28.9	Luggage and leather goods stores.....	34.7
Paint, glass and wallpaper stores.....	32.6	Tobacco stores and stands.....	20.3
Furniture stores.....	30.6	Book and stationery stores.....	32.1
Household appliance stores.....	30.9	Artists' supplies stores.....	38.4
Television sales and service shops.....	37.0	Cameras and photographic supplies stores.....	30.5
Furniture, television, radio and appliance stores.....	26.4	Music stores.....	32.8
Television, radio, piano and music stores.....	32.0	Gift, novelty and souvenir shops.....	34.3
TV and radio repair shops.....	50.6	Jewellery stores.....	41.6
Household appliance repair shops.....	53.1	Jewellery repair shops.....	70.2
China, glassware and kitchenware stores.....	40.6	Sporting goods stores.....	30.4
Floor coverings, curtains, upholstery and interior decoration stores.....	39.5	Bicycle shops.....	39.5
Picture and picture framing stores.....	56.9	Boats, outboard motors, boating accessories.....	23.0
Antique shops.....	43.0	Motorcycle dealers.....	26.9
<b>Other Retail Stores</b> .....	<b>34.5</b>	Pet shops.....	28.9
Drug stores without meals or lunches.....	32.3	Opticians.....	58.8
Drug stores with meals or lunches.....	32.9	Health appliance stores.....	46.6
Fuel dealers (other than oil).....	31.9	Hobby shops.....	31.4
Fuel oil dealers.....	25.5	Toy shops.....	38.9
Florists.....	50.3	<b>Total</b> .....	<b>26.9</b>

Table 3 shows operating expenses of service trade establishments, as percentages of receipts, for the more important kinds of businesses.

## 3.—Operating Expenses of Selected Service Trade Establishments, as Percentages of Receipts, Census 1961

Kind of Business	Salaries, Wages, Commissions	Rent	Interest, Mortgage and Other	Taxes and Licences	Depreciation	Repairs	Contributions and Other	Total Operating Expenses
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Regular theatres.....	21.8	7.4	0.7	5.3	3.8	2.4	51.2	92.6
Billiard parlours.....	13.5	9.2	1.5	3.7	4.7	2.9	38.4	73.9
Bowling alleys.....	29.3	11.4	5.2	4.0	9.8	4.8	27.5	89.0
Golf courses.....	34.2	3.0	4.0	3.1	5.7	6.4	35.5	91.9
Racetrack operation.....	17.6	3.2	4.6	2.9	3.9	2.3	49.3	83.8
Advertising agencies.....	62.9	5.9	0.4	0.6	1.3	0.4	22.9	94.4
Chartered and certified accountants.....	39.6	4.4	0.6	0.4	1.1	0.2	14.4	60.7
Barber shops.....	27.2	10.6	0.5	1.6	2.5	1.5	13.8	57.7
Beauty salons.....	36.4	9.1	0.6	1.2	3.3	1.8	22.7	75.1
Hand laundries.....	8.2	10.9	1.0	4.6	1.5	2.8	29.9	58.9
Dry cleaning and dyeing plants with laundry (except rug cleaning).....	47.5	4.0	1.3	1.1	6.0	2.3	29.5	91.7
Linen supply service with power laundry.....	41.0	0.7	0.6	1.4	4.3	3.2	35.8	87.0
Shoe repair shops.....	16.5	9.0	0.6	2.1	2.1	3.5	31.2	65.0
Shoeshine parlours.....	21.4	14.4	0.1	1.7	0.4	3.2	20.2	61.4
Valet service, pressing and repair shops.....	19.6	7.6	0.6	1.8	2.9	1.9	34.1	68.5
Blacksmiths and general repair shops.....	21.4	0.9	1.6	2.4	2.7	5.1	36.0	70.1
Funeral directors.....	22.7	2.0	1.7	2.2	5.3	2.3	43.6	79.8
Portrait photographers.....	21.4	5.2	0.8	1.2	3.5	1.4	40.7	74.2
Automobile and truck rentals (without driver).....	16.0	3.1	4.2	3.8	22.8	9.3	38.1	97.3
Driving schools.....	45.4	4.2	0.6	1.4	5.2	4.3	23.9	85.0
Full year hotels, licensed.....	25.4	2.0	2.3	3.2	4.6	2.8	53.3	93.6
Motels.....	16.0	1.0	8.9	6.0	15.3	5.9	28.7	81.8
Eating places.....	20.6	3.9	0.7	0.9	2.6	1.3	55.5	85.5
Fish and chip shops.....	11.7	5.5	1.1	1.3	3.1	1.3	55.0	79.0
Cocktail lounges, bars and nightclubs.....	22.6	2.5	1.6	2.0	2.1	2.2	58.4	91.4



Because of the prevalence of eating and drinking places, the number and receipts of the different types of operation included in this classification are given for each province and for the larger urban centres or areas in Table 4.

**4.—Number of Eating and Drinking Places and Receipts, by Province, Metropolitan Area, Major Urban Area and Other Urban Centres of 30,000 or More Population, Census 1961**

NOTE.—Urban centres are designated in this table by the following abbreviations: m.=metropolitan area, u.=major urban area and c.=urban centres of 30,000 or more population.

Province and Area	Eating Places	Eating Places with Alcoholic Beverages	Eating Places with Other Merchandise	Refreshment Booths and Stands	Fish and Chip Shops	Cocktail Lounges, Bars and Night-clubs	Taverns, Beverage Rooms, Public Houses	Total <sup>1</sup>
Newfoundland..... No.	145	7	72	19	2	20	66	342
\$'000	3,591	—	1,823	161	—	1,438	4,079	11,793
St. John's, m..... No.	44	—	19	1	—	5	24	96
\$'000	1,882	—	530	2	—	481	1,989	2
Prince Edward Island. No.	50	—	16	1	2	—	—	72
\$'000	1,547	—	793	2	2	—	—	2,408
Nova Scotia..... No.	389	5	157	47	17	4	34	681
\$'000	12,974	604	4,464	719	286	176	3,289	26,224
Halifax, m..... No.	110	2	43	10	9	2	13	190
\$'000	5,051	2	1,687	392	134	2	1,722	12,250
Sydney-Glace Bay, u. No.	43	1	12	2	2	1	19	80
\$'000	1,568	2	256	2	2	2	1,446	3,421
New Brunswick.... No.	299	—	127	48	11	1	1	510
\$'000	9,409	—	4,013	382	134	2	2	14,880
Saint John, m..... No.	49	—	20	4	6	—	—	82
\$'000	2,508	—	895	75	86	—	—	2
Moncton, u..... No.	29	—	10	1	—	1	—	42
\$'000	1,655	—	314	2	—	2	—	2,087
Quebec..... No.	4,600	177	2,186	288	40	130	617	8,167
\$'000	161,863	31,245	60,974	3,558	483	14,150	37,432	321,126
Chicoutimi- Jonqui�re, u. No.	66	6	27	3	2	—	—	104
\$'000	1,908	599	813	19	2	—	—	2
Drummondville, u. No.	22	1	18	2	—	—	3	47
\$'000	717	2	374	2	—	—	117	1,451
Granby, c..... No.	27	3	11	3	—	—	3	47
\$'000	959	468	262	98	—	—	105	1,891
Montreal, m..... No.	2,187	89	958	70	17	48	332	3,746
\$'000	96,398	20,936	34,993	2,394	288	7,901	23,527	2
Quebec, m..... No.	310	40	93	16	—	5	54	521
\$'000	12,760	6,210	3,158	88	—	1,117	3,139	2
Shawinigan, u..... No.	50	2	19	2	—	—	17	90
\$'000	1,406	2	274	2	—	—	589	2,359
Sherbrooke, u..... No.	65	2	29	—	—	2	1	99
\$'000	2,312	2	1,302	—	—	2	2	4,116
St. Jean, u..... No.	34	2	25	1	—	—	5	67
\$'000	1,114	2	559	2	—	—	227	2,467
Trois-Rivi�res, u. No.	73	7	29	1	1	5	12	129
\$'000	1,923	638	1,247	2	2	582	660	5,164
Valleyfield, u..... No.	24	2	10	3	—	—	2	42
\$'000	742	2	261	17	—	—	2	1,225
Ontario..... No.	3,971	101	1,722	201	307	20	443	7,099
\$'000	179,536	21,321	72,664	4,489	5,081	3,862	42,754	380,076
Belleville, c..... No.	26	—	5	—	1	—	—	34
\$'000	1,031	—	376	—	2	—	—	1,546
Brantford, u..... No.	25	—	18	2	4	—	2	52
\$'000	1,343	—	772	2	95	—	2	2,447
Cornwall, c..... No.	24	—	13	—	2	—	4	45
\$'000	928	—	313	—	2	—	380	1,831
Fort William- Port Arthur, u. No.	76	6	27	4	—	—	4	118
\$'000	3,459	539	575	91	—	—	398	2
Guelph, u..... No.	22	—	19	—	2	—	—	45
\$'000	779	—	832	—	2	—	—	2,100
Hamilton, m..... No.	236	14	87	15	42	4	44	457
\$'000	10,428	2,256	3,410	357	419	651	4,646	2

For footnotes, see end of table.

4.—Number of Eating and Drinking Places and Receipts, by Province, Metropolitan Area, Major Urban Area and Other Urban Centres of 30,000 or More Population, Census 1961—concluded.

Province or Territory and Area	Eating Places	Eating Places with Alcoholic Beverages	Eating Places with Other Merchandise	Refreshment Booths and Stands	Fish and Chip Shops	Cocktail Lounges, Bars and Night-clubs	Taverns, Beverage Rooms, Public Houses	Total <sup>1</sup>
Ontario—concluded								
Kingston, u..... No.	47	—	9	1	1	—	3	63
\$'000	2,792	—	588	2	2	—	259	4,030
Kitchener, m..... No.	68	—	39	3	5	—	7	129
\$'000	3,082	—	2,225	179	2	—	774	2
London, m..... No.	125	5	55	4	5	—	8	209
\$'000	5,465	1,014	2,831	151	133	—	1,194	11,222
Niagara Falls, u... No.	61	3	12	3	2	—	10	97
\$'000	2,745	383	614	45	2	—	774	5,114
Oshawa, u..... No.	40	—	30	1	4	—	—	77
\$'000	1,454	—	1,370	2	72	—	—	3,618
Ottawa, m..... No.	270	11	109	4	1	2	38	447
\$'000	14,571	1,825	5,532	450	2	2	4,193	29,071
Peterborough, u... No.	33	—	17	2	2	—	2	60
\$'000	1,771	—	783	2	2	—	2	3,286
St. Catharines, u... No.	55	1	21	8	4	—	7	100
\$'000	2,189	2	818	245	58	—	654	2
Sarnia, u..... No.	39	—	11	1	2	—	2	57
\$'000	1,833	—	345	2	2	—	2	2,665
Sault Ste. Marie, u. No.	42	4	5	1	—	—	6	59
\$'000	1,855	457	227	2	—	—	684	2
Sudbury, m..... No.	62	2	22	4	—	1	5	99
\$'000	3,553	2	964	82	—	2	569	5,386
Timmins, u..... No.	21	—	8	2	—	—	9	40
\$'000	1,005	—	218	2	—	—	438	2
Toronto, m..... No.	1,196	37	448	18	181	8	102	2,101
\$'000	67,661	10,768	24,774	596	3,108	2,702	16,704	2
Welland, c..... No.	18	—	8	1	4	—	1	33
\$'000	833	—	125	2	52	—	2	1,086
Windsor, m..... No.	125	6	42	5	6	3	69	263
\$'000	5,450	2,436	1,708	67	138	208	6,095	2
Manitoba..... No.	580	52	279	25	7	3	11	990
\$'000	23,627	2	9,096	490	55	405	585	44,670
Winnipeg, m..... No.	323	44	116	6	5	2	—	524
\$'000	15,095	7,606	4,217	43	42	2	—	2
Saskatchewan..... No.	580	14	293	17	2	1	67	998
\$'000	22,153	2	10,211	267	2	2	2,082	38,016
Moose Jaw, c..... No.	20	—	11	1	—	—	—	32
\$'000	1,276	—	459	2	—	—	—	2
Regina, c..... No.	64	7	24	—	—	—	—	101
\$'000	3,930	688	1,602	—	—	—	—	2
Saskatoon, c..... No.	65	4	25	—	2	—	—	98
\$'000	3,840	471	1,229	—	2	—	—	5,766
Alberta..... No.	948	26	331	20	6	2	17	1,396
\$'000	42,128	5,400	13,218	995	307	2	681	2
Calgary, m..... No.	174	10	52	2	—	—	—	246
\$'000	11,169	1,639	2,769	2	—	—	—	2
Edmonton, m..... No.	235	14	51	8	2	2	1	327
\$'000	11,547	3,478	2,862	620	2	2	2	20,414
Lethbridge, c..... No.	29	—	6	1	2	—	—	39
\$'000	1,549	—	312	2	2	—	—	2,020
British Columbia... No.	1,293	70	414	83	55	17	57	2,076
\$'000	47,755	9,196	12,825	3,065	958	2,606	5,241	92,938
Vancouver, m..... No.	636	44	193	38	22	14	23	1,003
\$'000	25,396	6,487	6,360	1,948	253	2,218	3,166	55,270
Victoria, m..... No.	98	10	28	2	20	2	4	169
\$'000	3,364	1,520	993	2	486	2	664	7,501
Yukon and North-west Territories... No.	23	—	2	2	—	2	3	38
\$'000	950	—	2	2	—	2	115	1,867
Canada..... No.	12,878	452	5,599	760	449	200	1,316	22,369
\$'000	565,534	77,695	190,149	14,144	7,374	23,073	96,286	1,000,003

<sup>1</sup> Includes other establishments not classified.

<sup>2</sup> Figures withheld to avoid disclosure of individual operations.

### Subsection 2.—Intercensal Surveys of Wholesale, Retail and Service Establishments

#### Wholesale Trade

Total sales of wholesalers, estimated from the results of intercensal sample surveys, have increased continuously for several years, the amount in 1965 being \$12,170,000,000. As shown in Table 5, all business groups reported increases over 1964. These estimates represent only the sales of wholesalers proper, operations of agents and brokers or manufacturers' sales branches being excluded.

#### 5.—Wholesale Sales, by Kind of Business, 1961-65

NOTE.—Includes only wholesalers proper, i.e., firms performing the function of buying merchandise on their own account for resale.

Kind of Business	1961	1962	1963	1964	1965 <sup>a</sup>
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Fresh fruits and vegetables.....	289	308	321	348	384
Groceries and food specialties.....	1,751	1,863	1,982	2,092	2,234
Meat and dairy products.....	175	174	179	190	222
Clothing and furnishings.....	117	103	105	112	116
Footwear.....	39	41	42	44	47
Other textile and clothing accessories.....	206	208	212	228	231
Drugs and drug sundries.....	236	248	260	286	317
Household electrical appliances.....	200	210	212	233	261
Farm machinery.....	68	71	83	100	115
Coal and coke.....	141	140	152	155	157
Hardware.....	351	357	358	391	393
Construction materials and supplies including lumber.....	726	780	838	932	982
Industrial and transportation equipment and supplies.....	750	776	825	973	1,106
Commercial, institutional and service equipment and supplies.....	140	139	142	150	164
Automotive parts and accessories.....	414	441	455	460	494
Newsprint, paper and paper products.....	292	309	335	371	391
Tobacco, confectionery and soft drinks.....	770	796	809	828	863
Other.....	2,373	2,676	2,885	3,136	3,693
<b>Totals, All Trades.....</b>	<b>9,037</b>	<b>9,641</b>	<b>10,195</b>	<b>11,029</b>	<b>12,170</b>

#### Retail Trade

The trend of retail trade is one of the best general indicators of the economic condition of the country. It is through retail stores that most goods are ultimately sold and such sales reflect the financial strength of the consumer except in times of short supply. The value of retail sales, estimated from intercensal sample surveys, increased by 51 p.c. during the period 1956-65. Estimates, by province and by kind of business, for 1961-65, not adjusted for price changes, are shown in Table 6.

#### 6.—Retail Trade, by Province and by Kind of Business, 1961-65

Province	1961	1962	1963	1964	1965 <sup>a</sup>
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Atlantic Provinces.....	1,465	1,521	1,594	1,701	1,817
Quebec.....	4,183	4,571	4,841	5,076	5,423
Ontario.....	6,340	6,641	7,016	7,407	8,018
Manitoba.....	817	880	915	971	1,007
Saskatchewan.....	905	968	1,056	1,154	1,239
Alberta.....	1,401	1,492	1,578	1,664	1,776
British Columbia <sup>1</sup> .....	1,665	1,797	1,911	2,096	2,312
<b>Canada<sup>2</sup>.....</b>	<b>16,777</b>	<b>17,871</b>	<b>18,910</b>	<b>20,068</b>	<b>21,591</b>

For footnotes, see end of table.



## 6.—Retail Trade, by Province and by Kind of Business, 1961-65—concluded

Kind of Business	1961	1962	1963	1964	1965 <sup>a</sup>
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Grocery and combination stores.....	3,581	3,754	3,987	4,141	4,378
Other food and beverage stores.....	1,244	1,344	1,422	1,502	1,654
General stores.....	654	678	705	741	776
Department stores.....	1,503	1,563	1,649	1,801	1,911
Variety stores.....	371	391	408	459	521
Motor vehicle dealers.....	2,488	2,741	3,034	3,277	3,709
Garages and filling stations.....	1,212	1,306	1,364	1,425	1,500
Men's clothing stores.....	261	251	303	322	343
Family clothing stores.....	243	252	257	272	298
Women's clothing stores.....	283	297	308	324	345
Shoe stores.....	170	180	182	184	196
Hardware stores.....	328	331	345	365	391
Lumber and building material dealers.....	426	452	473	511	523
Furniture, appliance and radio dealers.....	548	573	590	622	664
Restaurants.....	573	612	640	660	695
Fuel dealers.....	317	360	364	352	362
Drug stores.....	428	442	460	481	515
Jewellery stores.....	134	138	145	153	168
Miscellaneous.....	2,012	2,176	2,324	2,474	2,640

<sup>1</sup> Includes the Yukon and Northwest Territories.  
because of rounding of the figures.

<sup>2</sup> Totals are not the exact addition of the components

**Farm Implement Sales.**—The value, at wholesale prices, of new farm implements and equipment sold in 1964 amounted to \$326,976,000, an increase of 13.6 p.c. over the value of such sales in 1963. Increases occurred in all regions except Quebec and in all major groups of implements except haying machinery and miscellaneous farm equipment. In addition to the amount spent on new machinery, \$53,156,000 was spent in 1964 for repair parts, 6.9 p.c. more than in 1963.

## 7.—Sales of Farm Implements and Equipment, by Province and by Major Group, 1960-64

(Values at wholesale prices)

Province and Major Group	1960	1961	1962	1963	1964	Percentage Change 1963-64
	\$'000	\$'000	\$'000	\$'000	\$'000	
<b>Province</b>						
Atlantic Provinces.....	7,693	8,165	6,722	6,712	8,044	+19.8
Quebec.....	26,792	30,277	32,555	35,063	32,633	- 6.9
Ontario.....	49,399	51,006	50,886	59,769	69,385	+16.1
Manitoba.....	25,877	18,958	28,054	35,916	45,230	+25.9
Saskatchewan.....	57,359	41,615	59,348	82,666	96,366	+16.6
Alberta.....	44,993	45,723	55,294	61,930	68,149	+10.0
British Columbia.....	5,352	6,033	5,938	5,783	7,169	+24.0
<b>Totals.....</b>	<b>217,465</b>	<b>201,777</b>	<b>238,797</b>	<b>287,839</b>	<b>326,976</b>	<b>+13.6</b>
<b>Major Group</b>						
Tractors and engines.....	80,093	74,764	80,631	97,678	114,067	+16.8
Ploughs.....	11,635	11,460	10,969	12,934	15,877	+22.8
Tilling, cultivating and weeding machinery.....	12,650	12,939	15,363	18,050	21,106	+16.9
Planting, seeding and fertilizing machinery.....	7,873	8,224	9,477	11,380	14,447	+27.0
Haying machinery.....	30,544	29,298	32,214	31,425	30,867	- 1.8
Harvesting machinery.....	46,485	37,631	57,626	78,182	85,645	+ 9.5
Machines for preparing crops for market or for use.....	6,261	6,233	7,658	10,043	11,313	+12.6
Farm wagons, wagon trucks and sleighs <sup>1</sup> .....	2,025	1,910	1,770	2,610	3,571	+36.8
Barn equipment.....	4,095	4,535	5,892	6,289	7,268	+15.6
Dairy machinery and equipment <sup>2</sup> .....	5,766	5,589	5,621	4,993	9,342	+87.1
Spraying and dusting equipment.....	1,637	1,758	1,828	2,271	2,439	+ 7.4
Miscellaneous farm equipment.....	8,401	7,436	9,748	11,984	11,034	- 7.9

<sup>1</sup> This item designated as "Farm wagons, boxes and sleighs" in 1964.

<sup>2</sup> This item designated as "Farm dairy machinery and equipment" in 1964.

**New Motor Vehicle Sales.**—As the figures of Table 8 show, sales of new motor vehicles continue to climb each year, reaching a peak of 830,995 vehicles valued at \$2,739,329,000 in 1965.

**8.—Retail Sales of New Motor Vehicles, 1956-65**

Year	Passenger Cars		Trucks and Buses		Totals	
	No.	\$	No.	\$	No.	\$
1956.....	408,233	1,128,640,000	91,688	326,735,000	499,921	1,455,375,000
1957.....	382,023	1,087,620,000	76,276	281,311,000	458,299	1,368,931,000
1958.....	376,723	1,110,724,000	68,046	254,742,000	444,769	1,365,466,000
1959.....	425,038	1,240,961,000	77,588	299,207,000	502,626	1,540,168,000
1960.....	447,771	1,289,073,000	75,417	285,754,000	523,188	1,574,827,000
1961.....	437,319	1,290,026,000	74,160	261,382,000	511,479	1,551,408,000
1962.....	502,565	1,482,407,000	82,645	300,509,000	585,210	1,782,916,000
1963.....	557,787	1,716,121,000	97,202	345,918,000	654,989	2,062,039,000
1964.....	616,759	1,936,253,000	109,120	401,544,000	725,879	2,337,802,000
1965 <sup>p</sup> .....	708,716	2,267,314,000	122,279	472,015,000	830,995	2,739,329,000

**Sales Financing.**—The amount of instalment financing transacted by sales finance companies reached a record level in 1964, paper purchased and balances outstanding being higher than in 1963 for every type of goods with the exception of paper purchased for used commercial vehicles, which remained unchanged.

**9.—Retail Instalment Paper Purchased and Balances Outstanding, by Class of Goods, 1960-64**

(Millions of dollars)

Class of Goods	Paper Purchased					Balances Outstanding Dec. 31—				
	1960	1961	1962	1963	1964	1960	1961	1962	1963	1964
<b>Consumer Goods.....</b>	<b>878</b>	<b>768</b>	<b>851</b>	<b>925</b>	<b>1,059</b>	<b>829</b>	<b>756</b>	<b>801</b>	<b>874</b>	<b>1,035</b>
New passenger cars.....	378	330	381	442	511	625	569	609	687	809
Used passenger cars.....	298	250	265	288	319					
Radio and television sets, household appliances, furniture and other.....	202	188	205	195	229					
<b>Commercial and Industrial.....</b>	<b>366</b>	<b>344</b>	<b>378</b>	<b>420</b>	<b>478</b>	<b>393</b>	<b>395</b>	<b>440</b>	<b>519</b>	<b>586</b>
New commercial vehicles.....	97	87	94	108	123	151	138	151	170	197
Used commercial vehicles.....	57	47	49	51	51					
Other.....	212	210	235	261	303					
<b>Totals<sup>1</sup>.....</b>	<b>1,244</b>	<b>1,112</b>	<b>1,229</b>	<b>1,345</b>	<b>1,537</b>	<b>1,222</b>	<b>1,151</b>	<b>1,241</b>	<b>1,393</b>	<b>1,621</b>

<sup>1</sup> Totals are not the exact addition of the components because of rounding of the figures.

**Consumer Credit.**—Total balances outstanding on credit extended to consumers by retail stores and certain financial institutions are increasing very rapidly. Although the financial institutions included in the survey do not cover all sources of consumer credit, returns from the selected holders indicate that balances outstanding on credit extended to individuals for the purchase of consumer goods and services have more than doubled since 1956. The figures in Table 10 do not include credit extended for commercial purposes.

**10.—Balances Outstanding on Retail Trade Credit and Loans Extended to Individuals for Non-business Purposes by Certain Financial Institutions, 1956-65**

(Millions of dollars)

Year	Retail Trade Credit	Sales Finance Companies	Small Loans Companies	Chartered Banks	Credit Unions	Life Insurance Companies Policy Loans
1956.....	873	756	356	748	226	270
1957.....	901	780	362	677	258	295
1958.....	937	768	401	840	320	305
1959.....	992	806	484	1,001	397	323
1960.....	1,038	828	549	1,143	433	344
1961.....	1,088	756	594	1,366	516	358
1962.....	1,125	801	714	1,555	579	372
1963.....	1,183	874	810	1,824	691	385
1964.....	1,243	1,035	904	2,252	840	398
1965 <sup>p</sup> .....	1,324	1,142	1,029	2,728	..	407

Accounts outstanding on the books of retailers stood at \$1,323,800,000 at the end of 1965. Lumber and building material dealers and farm implement dealers, at one time included in these figures, have been omitted since 1958 so that the results now approximate more closely "consumer" credit.

**11.—Retail Credit 1956-65, and by Kind of Business, 1965**

Year	Accounts Receivable (at end of period)	Kind of Business	Accounts Receivable (at end of period)		
			Instalment	Charge	Total
	\$'000,000		\$'000,000	\$'000,000	\$'000,000
		<b>1965<sup>p</sup></b>			
1956.....	981.5 <sup>1</sup>	Department stores.....	..	..	564.8
1957.....	1,014.2 <sup>1</sup>	Motor vehicle.....	19.8	108.8	128.6
1958.....	937.2	Men's clothing.....	9.2	15.5	24.7
1959.....	992.5	Family clothing.....	13.0	13.9	26.9
1960.....	1,037.6	Women's clothing.....	4.4	12.7	17.1
1961.....	1,088.2	Hardware.....	8.0	30.9	38.9
1962.....	1,125.1	Furniture, appliance and radio.....	175.9	32.9	208.8
1963.....	1,182.8	Jewellery.....	15.7	10.9	26.6
1964.....	1,242.6	Grocery and combination (independent).....	..	..	37.0
1965.....	1,323.8	General stores.....	..	..	40.6
		Fuel.....	4.1	58.9	63.0
		Garages and filling stations.....	..	..	31.1
		All other trades.....	30.5	85.2	115.7
		<b>Totals, All Trades.....</b>	<b>..</b>	<b>..</b>	<b>1,323.8</b>

<sup>1</sup> Includes lumber and farm implement dealers (see preceding text).

**Service Establishments**

**Motion Picture Theatres.**—The receipts of motion picture theatres reached a peak in 1953 when they amounted to \$106,752,281; since then they declined each year to \$67,748,000 in 1962 but rose to \$71,641,505 in 1963 and \$78,347,715 in 1964. The number of regular theatres in operation continues to decrease although drive-ins show some advance in both number and receipts.



## 12.—Summary Statistics of Motion Picture Theatre Operations, 1963 and 1964

Item	1963			1964		
	Regular Theatres	Drive-in Theatres	Total	Regular Theatres	Drive-in Theatres	Total
Establishments..... No.	1,245	241	1,486	1,209	242	1,451
Receipts (excluding taxes)..... \$	63,816,752	7,824,753	71,641,505	69,324,744	9,022,971	78,347,715
Amusement taxes..... \$	4,370,712	396,002	4,766,714	4,594,779	407,528	5,002,307
Paid admissions..... No.	87,966,686	9,921,586	97,888,272	90,913,288	10,814,447	101,727,735

**Motion Picture Production.**—In 1964 there were 71 private firms producing and printing motion picture films and filmstrips for industry, government, education, entertainment, etc. These firms employed 953 persons, paid out \$4,356,119 in salaries and wages and had a gross revenue of \$12,694,301. Films were also produced by government agencies but operating information concerning such production is not available. In addition, 12 firms in other business categories produced films in 1964 (44 entertainment and documentary films for television use, nine non-theatrical films, 62 commercial advertising films for television, one commercial advertising film for theatre use, one silent motion picture film and 69 other films). This production brought in revenue amounting to \$120,999.

Table 13 shows types of film produced by private industry, classified by major producing region, and by government agencies during 1964. Altogether, these agencies produced 65,619,923 feet of 16mm. film in black and white, 12,532,685 feet of 16mm. film in colour, 18,408,173 feet of 35mm. film in black and white and 1,593,686 feet of 35mm. film in colour.

## 13.—Private Industry and Government Motion Picture Production, by Type of Film, 1964

Type	Private Industry				Government	Private and Government
	Quebec	Ontario	Other Provinces	Total		
	No.	No.	No.	No.	No.	No.
<b>Films in English or French.....</b>	<b>1,250</b>	<b>5,052</b>	<b>464</b>	<b>6,766</b>	<b>653</b>	<b>7,419</b>
Theatrical features, 60 minutes or longer.....	—	3	—	3	3	6
Theatrical shorts, less than 60 minutes.....	20	8	—	28	28	56
Television entertainment.....	174	80	18	272	—	272
Television, information or documentary.....	57	66	1	124	79	203
Non-theatrical (also non-television) motion pictures.....	23	136	78	237	130	367
Silent motion pictures.....	7	94	108	209	25	234
Television commercials (two minutes or less).....	267	2,419	138	2,824	2	2,826
Theatre commercials (two minutes or less).....	11	241	—	252	—	252
Other (newsreels, newsclips, trailers, titles, production services, etc.).....	691	1,977	121	2,789	318	3,107
Silent filmstrips (slide films).....	—	2	—	2	68	70
Sound filmstrips (slide films) with records.....	—	26	—	26	—	26
<b>Films in Other than English or French.....</b>	<b>67</b>	<b>2</b>	<b>—</b>	<b>69</b>	<b>82</b>	<b>151</b>

**Advertising Agencies.**—Table 14 records the growth of business done by advertising agencies during 1964 as compared with the four previous years.

**14.—Summary Statistics of Advertising Agencies, 1960-64**

Item	1960	1961	1962	1963	1964
Billings..... \$	272,739,802	282,561,449	298,584,954	302,851,514	318,140,339
Commissionable billings..... \$	267,756,156	277,805,963	293,022,021	296,762,297	311,332,070
Other..... \$	4,983,646	4,755,486	5,562,933	6,089,217	6,808,269
Gross revenue..... \$	45,150,389	46,089,647	49,348,113	50,465,061	53,591,932
Distribution of Billings—					
Publications..... p.c.	47.2	45.5	44.0	42.2	40.4
Production, artwork, etc.....	18.7	19.0	17.2	16.2	18.4
Radio.....	9.7	9.4	10.8	10.7	10.5
Television.....	19.3	21.4	22.8	26.3	26.7
Other visual.....	5.1	4.6	5.1	4.6	3.9
Other.....	--	0.1	0.1	--	0.1

**Hotels.**—In 1964 there were 4,976 hotels in operation in Canada, 4,407 of them full-year hotels and 569 seasonal. Table 15 shows the provincial distribution of these establishments, together with the sources of their revenue for 1964, with totals for 1958-64.

**15.—Hotels and Their Receipts, by Source 1958-64, and by Province, 1964**

Year and Province or Territory	Hotels	Rooms	Receipts				
			Rooms	Meals	Beer, Wine and Liquor	All Other Sources	Total <sup>1</sup>
	No.	No.	\$'000	\$'000	\$'000	\$'000	\$'000
1958.....	5,088	151,362	111,174	87,550	243,695	37,876	480,295
1959.....	5,269	154,725	117,396	95,139	264,087	40,861	517,483
1960.....	5,294	155,538	120,890	98,641	283,223	42,703	545,457
1961.....	5,128	159,674	130,077	104,024	285,125	48,537	567,762
1962.....	4,983	152,467	135,751	112,306	295,868	43,764	587,689
1963.....	4,787	150,687	141,264	122,165	314,027	45,144	622,601
1964.....	4,976	155,657	157,381	139,281	341,407	48,687	686,756
<b>Province, 1964</b>							
Newfoundland.....	70	1,418	1,963	1,378	2,675	408	6,423
Prince Edward Island.....	14	475	530	392	2	2	1,028
Nova Scotia.....	94	3,317	4,081	2,409	1,231	896	8,617
New Brunswick.....	66	2,531	2,650	1,570	2	2	5,566
Quebec.....	1,745	46,596	43,455	38,254	84,277	11,690	177,676
Ontario.....	1,281	44,519	50,787	49,827	94,462	14,758	209,834
Manitoba.....	277	8,228	7,568	6,865	35,806	3,714	53,952
Saskatchewan.....	432	10,234	6,584	5,454	33,925	3,209	49,172
Alberta.....	455	16,126	15,462	11,448	37,835	6,491	71,236
British Columbia, Yukon and North-west Territories.....	542	22,213	24,302	21,685	50,329	6,936	103,252

<sup>1</sup> Components may not add to totals because of rounding.  
individual operations.

<sup>2</sup> Figures withheld to avoid disclosure of

## Section 2.—The Marketing of Agricultural Products

### Subsection 1.—The Grain Trade, 1964-65

At Aug. 1, 1964, stocks of the five major Canadian grains (wheat, oats, barley, rye and flaxseed) amounted to 770,721,000 bu., compared with stocks of 734,919,000 bu. at Aug. 1, 1963. However, total production of these grains was estimated at 1,156,951,000 bu. in 1964, some 19 p.c. less than the 1963 level of 1,431,172,000 bu., so that total estimated domestic supplies amounted to 1,927,831,000 bu. in 1964-65, compared with 2,166,294,000 bu. in the previous season.

Marketings in the Prairie Provinces during the crop year 1964-65 amounted to 664,686,000 bu., 10 p.c. below the 1963-64 level of 735,653,000 bu. but 20 p.c. above the ten-year (1953-54—1962-63) average of 555,092,000 bu. Reflecting smaller shipments of wheat, wheat flour, oats, barley and rye, total exports of the five major grains and their products, at 471,382,000 bu., were some 31 p.c. lower than the 1963-64 record figure of 679,381,000 bu., but 17 p.c. above the ten-year average of 404,185,000 bu. Although decreases were recorded for both exports and domestic use, total disappearance of these grains more than offset the 1964 production and, as a result, carryover stocks at July 31, 1965 amounted to 747,364,000 bu., a decrease of 3 p.c. from the 770,721,000 bu. at July 31, 1964.

Marketings of wheat, oats and barley continued under the compulsory crop-year pools system of the Canadian Wheat Board. As in 1963-64, an initial quota of 100 units was in effect at local delivery points at the beginning of the marketing year. Permit holders were entitled to deliver a maximum of 300 bu. of wheat or 800 bu. of oats or 500 bu. of barley or 500 bu. of rye or any combination of these grains which, when calculated on a unit basis, did not exceed 100. The initial unit quota was followed by general quotas based upon bushels per specified acre; specified acreage consisted of each permit holder's acreage seeded to wheat (including Durum), oats, barley and rye, the summer fallow acreage and the acreage seeded to eligible grasses and forage crops. The crop year commenced with the initial quotas in effect at all delivery points. The first general quotas were established in early September and were extended and increased as local country elevator space became available.

Flaxseed was placed on a delivery quota of the larger of 5 bu. per seeded acre or 200 bu.; this quota was increased on Sept. 21 to 10 bu. per seeded acre or 400 bu. and on Dec. 7 the quota was declared open for the remainder of the 1964-65 crop year. Rapeseed was placed on an initial delivery quota of the larger of 5 bu. per seeded acre or 200 bu.; on Oct. 26 the quota was increased in Manitoba and Saskatchewan to the larger of 10 bu. per seeded acre or 400 bu. and in Alberta to the larger of 8 bu. per seeded acre or 325 bu.; on Dec. 7 the quota was declared open in Manitoba and Saskatchewan, and in Alberta it was increased to the larger of 10 bu. per seeded acre or 400 bu.; on Dec. 21 the quota in Alberta was also declared open. Rye, which was contained in the specified acreage, was placed on a supplementary quota of the larger of 5 bu. per seeded acre or 200 bu. on Jan. 11, 1965, and as of Apr. 12 the delivery quota was declared open. A number of supplementary delivery quotas were established on oats and barley.

Stocks of grain in store at country and terminal elevators at Aug. 1, 1964 amounted to 458,331,000 bu., some 89,178,000 bu. less than at the same date of 1963. The space in commercial positions at the beginning of the 1964-65 crop year, combined with a good export movement, permitted a steady advance in delivery quotas even though large volumes of grain were being marketed at each quota level. Although a considerable portion of the 1964 crop had been harvested in a high moisture condition, the rapid movement required



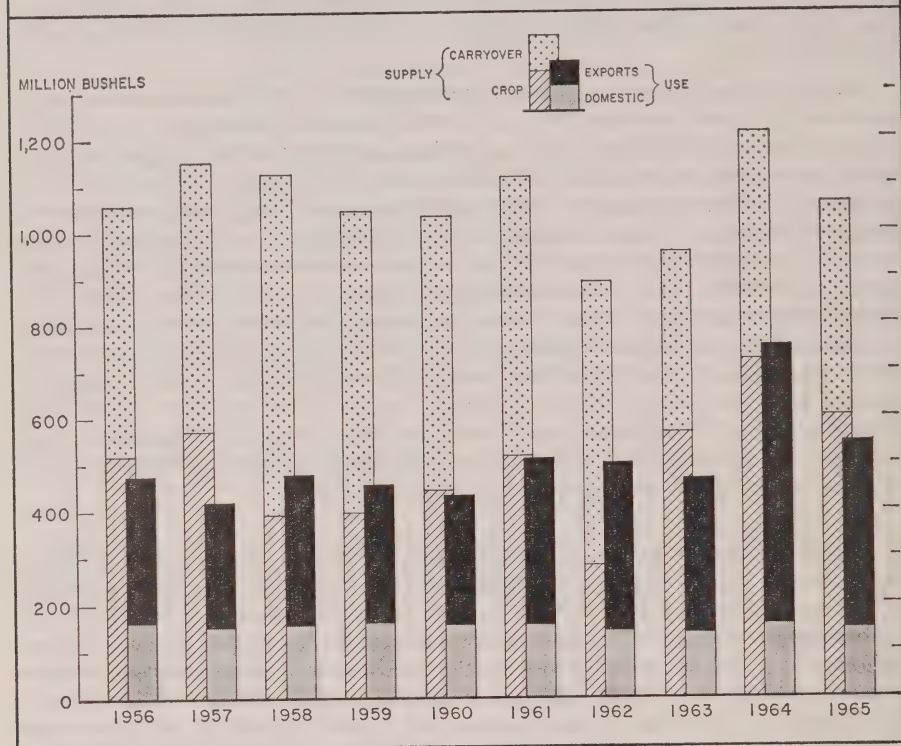
to meet the fall shipping program did not permit preference to the movement of this grain until the close of navigation on the Great Lakes. On Dec. 7, the Canadian Wheat Board authorized delivery of wheat, oats, barley and rye having a moisture content of 15.7 p.c. and over, up to 4 bu. per seeded acre in excess of established quotas, provided such deliveries, when added to those already made under authorized quotas, did not exceed 6 bu. per specified acre.

In order to provide stocks of wheat required to meet export commitments and anticipated sales, the Board authorized two supplementary quotas for wheat, other than Durum, during the last half of the crop year. In opening these supplementary quotas, the Board initially gave preference to the delivery of wheat with a moisture content of 15.7 p.c. and over. The first supplementary quota was authorized on Feb. 1, 1965, and permitted delivery at all points of high-moisture wheat, other than Durum, up to the larger of 4 bu. per seeded acre or 200 bu. After Feb. 15, as space became available in excess of that required for delivery of the 6 bu. per specified acre quota, the 4 bu. supplementary quota was amended to allow the delivery of wheat regardless of moisture content. On Apr. 13 a second supplementary quota of the larger of 5 bu. per seeded acre or 200 bu. was authorized for high-moisture wheat, other than Durum; this was extended to wheat regardless of moisture, by station, as space became available in excess of that required to complete the 6-bu. general plus 4-bu. supplementary quotas. By the end of the crop year these amended supplementary quotas had been gradually extended to all delivery points in Western Canada, i.e., 6-bu. general plus 9-bu. supplementary (except Durum).

**Wheat.**—Domestic supplies of wheat for the 1964-65 crop year totalled 1,059,874,000 bu., an amount 12 p.c. below the 1963-64 figure of 1,210,692,000 bu. and 8 p.c. less than the 1956-57 record total of 1,152,162,000 bu. Both the 1964 production of 600,424,000 bu. and the carryover stocks of 459,440,000 bu. registered decreases from the 1963 levels of 723,442,000 bu. and 487,247,000 bu., respectively. Exports of wheat and flour, in terms of wheat, amounted to 399,594,000 bu., a figure sharply below the all-time high of 594,548,000 bu. exported in the preceding year but higher than both the ten-year average of 301,841,000 bu. and the long-term average of 262,241,000 bu. Domestic disappearance of wheat was 147,256,000 bu. compared with 156,704,000 bu. in 1963-64. Total disappearance, amounting to some 546,850,000 bu., was considerably less than the 1964 production and, as a result, carryover stocks at July 31, 1965 were 513,024,000 bu. compared with 459,440,000 bu. at the same date of 1964.

Initial payment for Western Canadian wheat in the 1964-65 crop year was \$1.50 per bu., basis No. 1 Northern in store Fort William—Port Arthur or Vancouver. There were no adjustment or interim payments on the 1964-65 wheat pool but on Feb. 25, 1966, the final payment was announced. Producers delivered 523,703,000 bu. of wheat, including 31,030,000 bu. of Durum; this was the third largest volume of wheat ever delivered by producers to the Board in a crop year. The amount of the final payment distributed to producers was \$200,107,000, of which \$12,281,000 was distributed to producers of Durum wheat. After deducting the 1-p.c. Prairie Farm Assistance Act levy, the average final payment on Spring wheat (other than Durum) was 38.124 cents per bu. and that on Durum was 39.579 cents per bu. The total payment for No. 1 Northern, basis in store Fort William—Port Arthur or Vancouver and prior to deduction of the PFAA levy, amounted to \$1.88683 per bu.

### SUPPLY AND DISPOSITION OF CANADIAN WHEAT CROP YEARS ENDED JULY 31, 1956-65



The crop year 1964-65 coincided with the third year of the fifth three-year International Wheat Agreement, which became effective Aug. 1, 1962. Sales under the Agreement continued to be quite widely distributed, with 27 of the 38 importing countries included in the pact purchasing wheat and/or flour from Canada. Purchases of Canadian wheat and flour under the terms of the IWA amounted to the equivalent of 207,603,000 bu. during 1964-65 and accounted for 35 p.c. of the total sales under the Agreement. Britain was the leading IWA market for Canadian wheat and flour, shipments to that country amounting to some 80,148,000 bu., followed by Japan taking 50,172,000 bu.; the Federal Republic of Germany, 20,509,000 bu.; Belgium and Luxembourg, 15,672,000 bu.; Cuba, 14,745,000 bu.; Venezuela, 9,123,000 bu.; India, 7,266,000 bu.; and the Philippines, 6,483,000 bu. The leading markets for Class II wheat and flour in 1964-65 were: Communist China, 62,370,000 bu.; Czechoslovakia, 26,245,000 bu.; Poland, 18,899,000 bu.; East Germany, 10,522,000 bu.; and U.S.S.R., 10,199,000 bu. During 1964-65, domestic sales of all classes of wheat were made at the same prices as those prevailing for wheat sold under the IWA. Class II prices for all grades of wheat coincided with the IWA and domestic quotations.

**Other Grains.**—The supply and disposition of the major Canadian grains for the crop years 1963-64 and 1964-65 are shown in Table 16.

The initial payment for oats in 1964-65, basis No. 2 C.W. in store Fort William-Port Arthur, was 60 cents per bu., the same as in 1963-64; that for barley, basis No. 3 C.W. Six-Row in store Fort William-Port Arthur, was 96 cents per bu., also unchanged from the previous year. No interim payments were made on either grain during the crop year and final payments on the oat and barley pools were announced on Mar. 17, 1966. On oats, the final surplus for distribution was some \$6,850,000 and, based on a total of 38,759,000 bu. delivered to the 1964-65 pool, averaged 17.674 cents per bu. after deducting the 1-p.c. PFAA levy. For barley, based on deliveries of 71,426,000 bu. and a final payment for producers of some \$22,218,000, the average final payment was 31.107 cents per bu. after deducting the 1-p.c. PFAA levy. Total prices, basis in store Fort William-Port Arthur, realized by producers for representative grades prior to the PFAA levy were: No. 2 C.W. oats, \$0.77152 per bu.; No. 1 Feed oats, \$0.73064 per bu.; No. 3 C.W. Six-Row barley, \$1.26026 per bu.; and No. 1 Feed barley, \$1.18526 per bu. Deliveries of rye and flaxseed in Western Canada amounted to 7,347,000 bu. and 16,847,000 bu., respectively.

Combined exports of oats, bagged seed oats, barley, rye and flaxseed (including exports of oatmeal and rolled oats, malt, pot and pearl barley and rye flour and meal in terms of grain equivalent) amounted to 71,787,000 bu. during 1964-65, some 15 p.c. less than the 1963-64 exports of 84,834,000 bu. and 30 p.c. below the ten-year (1953-54-1962-63) average. Exports of Canadian oats in bulk totalled 14,727,000 bu. compared with 17,532,000 bu. shipped during 1963-64, the major markets being the Netherlands and the Federal Republic of Germany to which countries were shipped 5,201,000 bu. and 3,981,000 bu., respectively, compared with 8,410,000 bu. and 1,791,000 bu., respectively, the previous year. Other 1964-65 shipments went to the United States, 2,543,000 bu.; Italy, 1,170,000 bu.; Britain, 851,000 bu.; Belgium and Luxembourg, 514,000 bu.; and Ireland, 419,000 bu. In addition, exports of oatmeal and rolled oats amounted to the equivalent of 435,000 bu. in 1964-65 compared with 711,000 bu. the year before.

Exports of barley as grain amounted to 32,738,000 bu., 21 p.c. lower than in 1963-64. Most of the decline was accounted for by smaller shipments to Communist China, the United States and Czechoslovakia which countries received 2,005,000 bu., 7,738,000 bu. and no shipments, respectively, compared with 14,694,000 bu., 8,675,000 bu. and 3,022,000 bu., respectively, in 1963-64. Higher shipments were made to Britain, Japan and Italy, which received, respectively, 9,832,000 bu. compared with 9,546,000 bu., 8,854,000 bu. compared with 3,654,000 bu., and 2,418,000 bu. compared with no shipments in 1963-64. In addition, exports of Canadian barley as malt were the equivalent of 4,280,000 bu. compared with 5,409,000 bu. in 1963-64. Canadian malt was shipped to 24 different destinations, the major markets being: the United States, 1,403,000 bu.; the Philippines, 604,000 bu.; Venezuela, 390,000 bu.; and Puerto Rico, 328,000 bu.

Exports of Canadian rye amounted to 4,857,000 bu. in 1964-65 compared with 5,501,000 bu. in the previous year; the principal markets were the United States which took 2,487,000 bu. and Japan, 1,046,000 bu. Clearances of Canadian flaxseed moving overseas during 1964-65 amounted to 14,346,000 bu., 5 p.c. above the 13,638,000 bu. shipped in 1963-64. Britain, taking 4,776,000 bu., was the leading market followed by Japan with 4,051,000 bu. and the Netherlands with 2,039,000 bu. Exports of linseed oil were equivalent to about 1,336,000 bu. of flaxseed, most of it going to Britain.

In addition to the exports of the five principal grains and their products, trade in rape-seed amounted to 9,276,000 bu. in 1964-65 compared with 5,308,000 bu. in 1963-64 and mustard seed exports were 1,239,000 bu., an amount slightly higher than the 1,070,000 bu. shipped the previous year.



## 16.—Supply and Disposition of Canadian Grain, Crop Years Ended July 31, 1964 and 1965

(Millions of bushels)

Item	Wheat	Oats	Barley	Rye	Flaxseed
<b>Crop Year 1963-64</b>					
Carryover, Aug. 1, 1963.....	487.2	150.3	89.2	4.2	4.0
Production in 1963.....	723.4	453.1	220.7	12.8	21.1
Imports <sup>1</sup> .....	<sup>2</sup>	<sup>2</sup>	<sup>2</sup>	0.1	0.1
<b>Totals, Supply</b> .....	<b>1,210.7</b>	<b>603.4</b>	<b>309.9</b>	<b>17.1</b>	<b>25.2</b>
Exports <sup>2</sup> .....	594.5	18.8	46.9	5.5	13.6
Domestic use <sup>4</sup> .....	156.7	405.2	144.7	4.6	5.0
<b>Totals, Disposition</b> .....	<b>751.3</b>	<b>424.0</b>	<b>191.7</b>	<b>10.1</b>	<b>18.6</b>
Carryover, July 31, 1964.....	459.4	179.4	118.3	7.1	6.6
<b>Crop Year 1964-65</b>					
Carryover, Aug. 1, 1964.....	459.4	179.4	118.3	7.1	6.6
Production in 1964.....	600.4	357.2	166.8	12.2	20.3
Imports <sup>1</sup> .....	<sup>2</sup>	<sup>2</sup>	<sup>2</sup>	0.1	<sup>2</sup>
<b>Totals, Supply</b> .....	<b>1,059.9</b>	<b>536.6</b>	<b>285.1</b>	<b>19.4</b>	<b>26.9</b>
Exports <sup>3</sup> .....	399.6	15.6	37.0	4.9	14.3
Domestic use <sup>4</sup> .....	147.3	390.9	159.3	6.2	5.4
<b>Totals, Disposition</b> .....	<b>546.9</b>	<b>406.5</b>	<b>196.4</b>	<b>11.0</b>	<b>19.7</b>
Carryover, July 31, 1965.....	513.0	130.1	88.8	8.3	7.1

<sup>1</sup> Includes flour in terms of wheat, rolled oats and oatmeal in terms of oats, malt and pot and pearl barley in terms of barley, and rye flour in terms of rye. <sup>2</sup> Fewer than 50,000 bu. <sup>3</sup> Includes bagged seed wheat, wheat flour in terms of wheat, bagged seed oats, rolled oats and oatmeal in terms of oats, malt and pot and pearl barley in terms of barley, and rye flour and meal in terms of rye. <sup>4</sup> Includes human food, seed requirements, industrial use, loss in handling and animal feed.

## 17.—Production, Imports, Exports and Domestic Use of Wheat, Crop Years Ended July 31, 1960-65

(Millions of bushels)

Item	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65
Carryover, Aug. 1.....	588.0	599.6	607.8	391.1	487.2	459.4
Production.....	445.1	518.4	283.4	565.6	723.4	600.4
Imports.....	<sup>1</sup>	<sup>1</sup>	<sup>1</sup>	<sup>1</sup>	<sup>1</sup>	<sup>1</sup>
<b>Totals, Supply</b> .....	<b>1,033.1</b>	<b>1,118.0</b>	<b>891.2</b>	<b>956.6</b>	<b>1,210.7</b>	<b>1,059.9</b>
Exports <sup>2</sup> .....	277.3	353.2	358.0	331.2	594.5	399.6
Domestic use.....	156.2	156.9	142.2	138.1	156.7	147.3
<b>Totals, Disposition</b> .....	<b>433.5</b>	<b>510.1</b>	<b>500.2</b>	<b>469.4</b>	<b>751.3</b>	<b>546.9</b>
Carryover, July 31.....	599.6	607.8	391.1	487.2	459.4	513.0

<sup>1</sup> Fewer than 50,000 bu.<sup>2</sup> Includes bagged seed wheat and wheat flour in terms of wheat.

**Miscellaneous Grain Trade Statistics.—Grain Handled at Eastern Elevators.**—Total receipts of the five major grains at eastern elevators in the 1964-65 crop year amounted to 401,015,510 bu., 20 p.c. less than in 1963-64. Shipments totalled 360,388,327 bu., 35 p.c. below the 1963-64 level.

**18.—Canadian Grain Handled at Eastern Elevators, Crop Years Ended July 31, 1961-65**

NOTE.—Figures for the crop years ended 1922-60 are given in the corresponding table of previous Year Books beginning with the 1931 edition.

Item and Crop Year	Wheat	Oats	Barley	Rye	Flaxseed	Total Grain
	bu.	bu.	bu.	bu.	bu.	bu.
<b>Receipts—</b>						
1960-61.....	283,713,889	32,686,125	34,139,873	1,305,521	6,010,008	357,855,416
1961-62.....	243,025,206	18,252,519	21,412,213	3,202,174	7,197,612	293,089,724
1962-63.....	244,953,613	30,096,077	21,431,674	3,692,938	7,786,039	307,960,341
1963-64.....	425,500,798	34,575,280	31,431,415	2,726,233	7,301,269	501,534,995
1964-65.....	332,054,894	34,679,472	26,523,625	1,846,451	5,911,068	401,015,510
<b>Shipments—</b>						
1960-61.....	287,810,455	30,785,810	31,288,234	1,200,616	6,086,236	357,171,351
1961-62.....	258,787,935	19,494,745	23,530,370	3,227,310	7,098,689	312,139,049
1962-63.....	229,459,107	29,294,945	21,984,624	3,432,627	7,639,856	291,811,159
1963-64.....	474,419,208	35,481,811	31,076,245	2,658,662	7,260,962	550,896,888
1964-65.....	292,152,053	33,899,769	26,520,419	1,641,919	6,174,167	360,388,327

**Lake Shipments of Grain.**—The 1965 navigation season opened at the Canadian Lake-head on Apr. 20 and closed on Dec. 16. During the season, total vessel shipments of wheat, oats, barley, rye, flaxseed, rapeseed and buckwheat amounted to 410,298,000 bu., 7 p.c. less than the 440,439,000 bu. shipped during the 1964 navigation season, which opened on Apr. 2 and closed on Dec. 14.

**19.—Lake Shipments of Canadian Grain from Fort William-Port Arthur, Navigation Seasons 1964 and 1965**

Grain	1964				1965			
	To Canadian Ports	To U.S. Ports	To Foreign Ports	Total Shipments	To Canadian Ports	To U.S. Ports	To Overseas Ports	Total Shipments
Wheat.....bu.	342,838,180	657,020	5,804,573	349,299,773	294,809,502	—	6,124,430	300,933,932
Oats....."	32,590,340	—	968,359	33,558,729	35,710,134	276,739	10,070,780	46,057,653
Barley....."	31,558,158	7,594,650	3,557,717	42,710,525	35,745,657	5,177,207	5,421,569	46,344,433
Rye....."	1,185,785	2,012,301	1,724,242	4,922,328	1,762,604	1,487,880	952,908	4,203,392
Flaxseed....."	6,589,060	—	2,924,342	9,513,402	3,701,644	—	7,339,746	11,041,390
Rapeseed....."	—	—	59,359	59,359	100,733	—	1,236,564	1,337,317
Buckwheat....."	282,722	—	91,779	374,501	—	—	380,115	380,115
<b>Totals.....bu.</b>	<b>415,044,245</b>	<b>10,263,971</b>	<b>15,130,401</b>	<b>440,438,617</b>	<b>371,830,274</b>	<b>6,941,826</b>	<b>31,526,132</b>	<b>410,298,232</b>
Sunflower seed.....bu.	—	—	87,117	87,117	—	—	94,873	94,873
Sample grain....."	7,235,070	—	—	7,235,070	—	—	—	—
Screenings.....ton	105,381	—	64,454	169,835	71,175	—	62,888	134,063

*Wheat Flour.*—Production of wheat flour in the crop year 1964-65 amounted to 39,107,000 cwt., about 22 p.c. lower than in the previous crop year. Similarly, wheat milled for flour at 87,209,000 bu. was 22 p.c. less than during 1963-64. Of the latter, about 76,286,000 bu. were Western Canadian spring wheat (other than Durum) and the remainder consisted of Ontario winter wheat, Durum and 'other'. Based on a daily operating potential of some 176,000 cwt., utilization of milling capacity averaged 76.7 p.c. in 1964-65 compared with 94.3 p.c. in the preceding year. Exports of wheat flour during the 1964-65 crop year amounted to 13,714,000 cwt., 43 p.c. smaller than in 1963-64.

**20.—Wheat Milled for Flour, and Production and Exports of Wheat Flour, Five-Year Averages 1940-60 and Crop Years Ended July 31, 1961-65**

Crop Year (Aug. 1—July 31)	Wheat Milled for Flour	Wheat Flour Production	Wheat Flour Exports	
			Amount	P.C. of Production
	'000 bu.	cwt.	cwt.	
Av. 1940-41 — 1944-45.....	99,705	43,908,245	23,699,546	54.0
Av. 1945-46 — 1949-50.....	107,330	47,011,540	25,819,721	54.9
Av. 1950-51 — 1954-55.....	100,446	43,847,894	21,812,041	49.7
Av. 1955-56 — 1959-60.....	90,148	39,752,589	16,349,155	41.1
1960-61.....	89,731	39,914,644	15,513,836	38.9
1961-62.....	88,241	39,539,651	13,892,676	35.1
1962-63.....	78,789	35,505,220	11,854,453	33.4
1963-64.....	111,671	50,103,569	23,873,987	47.6
1964-65.....	87,209	39,107,358	13,714,069	35.1

**Subsection 2.—Livestock Marketings\***

The year 1965 was quite successful for livestock producers. Marketings of cattle and calves through commercial channels were the highest ever reached. With smaller meat supplies in the United States, a keen export market developed in the second quarter of the year and remained until mid-December; there were no imports of slaughter cattle from the United States during the year, although in 1964 30,878 United States butcher cattle were slaughtered in Canadian plants during a fairly short period. Domestic disappearance of beef from commercial supplies, at 1,357,000,000 lb., was up 6 p.c. from the previous year. Despite higher prices received during the better part of the year, the over-all averages for all cattle and calves were about the same as in 1964, the result of a heavier volume of cows marketed. Hog marketings were somewhat below 1964 but higher prices resulted in an all-time record commercial value of \$343,200,000. Sheep and lamb marketings continued their downward trend, following consistently lower production.

\* More detailed information is available from DBS annual report *Livestock and Animal Products Statistics* (Catalogue No. 23-203), and the Canada Department of Agriculture publication *Livestock Market Review*. Statistics of livestock and poultry production and disappearance are given on pp. 479-483.



## 21.—Livestock Marketed at Stockyards and Packing Plants, by Grade, 1961-65

Livestock	1961	1962	1963	1964	1965 <sup>1</sup>
	No.	No.	No.	No.	No.
<b>Cattle</b> .....	<b>2,532,248</b>	<b>2,493,814</b>	<b>2,567,475</b>	<b>2,869,834</b>	<b>3,412,043</b>
Steers— <sup>2</sup>					
Choice.....	554,666	518,104	649,731	720,513	718,082
Good.....	314,000	272,379	273,428	313,813	292,940
Medium.....	163,484	160,971	155,543	172,691	208,793
Common.....	55,603	56,404	51,916	74,095	93,732
Heifers— <sup>2</sup>					
Choice.....	116,670	101,667	113,706	137,161	167,166
Good.....	104,101	105,913	103,383	131,006	169,994
Medium.....	105,642	112,796	107,274	115,452	160,974
Common.....	57,596	56,673	50,095	59,495	90,286
Cows.....	566,045	642,781	590,797	629,904	845,352
Bulls.....	74,045	69,515	60,754	65,486	78,977
Feeder steers.....	323,932	307,883	323,417	355,879	435,847
Stock and feeder cows and heifers.....	95,464	88,728	87,431	94,339	151,900
<b>Calves</b> .....	<b>918,990</b>	<b>984,237</b>	<b>916,068</b>	<b>983,616</b>	<b>1,182,623</b>
Choice and good—					
Veal.....	173,071	211,444	202,602	223,489	208,543
Butcher <sup>3</sup> .....	..	..	..	..	53,466
Medium and common—					
All weights <sup>4</sup> .....	474,809	479,717	461,067	497,608	565,252
Stock.....	271,110	293,076	252,399	262,519	355,362
<b>Hog Carcass Gradings</b> .....	<b>6,448,956</b>	<b>6,593,945</b>	<b>6,520,828</b>	<b>7,281,644</b>	<b>7,077,126</b>
"A".....	2,105,855	2,299,956	2,384,686	2,726,771	2,814,675
"B".....	2,917,488	2,947,274	2,882,431	3,200,876	3,065,538
"C".....	613,412	543,769	494,985	536,625	469,325
"D".....	39,306	47,597	37,159	38,541	35,406
Light.....	152,966	168,171	135,400	160,744	154,264
Heavy.....	212,903	216,085	227,475	220,359	199,619
Extra heavy.....	77,960	77,472	78,938	78,574	67,321
"E" <sup>5</sup> .....	50,503	53,368	45,452	51,818	50,094
Sows.....	278,563	240,253	234,302	267,336	220,894
<b>Lambs and Sheep Graded Alive</b> .....	<b>442,299</b>	<b>72,744</b>	<b>64,419</b>	<b>57,663</b>	<b>59,248</b>
<b>Lamb and Sheep Carcass Gradings</b> .....	<b>161,115</b>	<b>499,279</b>	<b>450,501</b>	<b>436,490</b>	<b>359,328</b>

<sup>1</sup> Includes Newfoundland for the first time. <sup>2</sup> Fed calves discontinued Jan. 1, 1965; included with steers and heifers. <sup>3</sup> Butcher calves not reported separately before 1965. <sup>4</sup> Grass calves discontinued Jan. 1, 1965; included with medium and common, all weights. <sup>5</sup> Includes injured hogs, ridglings and stags.

In addition to cattle sold through public stockyards and directly to packing plants, there were 36,122 cattle shipped from country points in one province to country points in another and 183,071 shipped direct on export, totalling 3,631,236. All provinces showed substantial gains. On a percentage basis, British Columbia made the best showing with a 67.4-p.c. increase due largely to a sharp rise in export sales but, numerically, the three largest cattle producers kept the previous year's trend—Alberta leading with an increase of 195,359, Saskatchewan with 165,523 and Ontario with 131,729 over 1964. The trend in calf marketings followed closely that of the cattle market, both in volume and in demand. A keen export trade developed during the heavy fall deliveries and stocker calves formed a large part of the movement to the United States.

Reversing the pattern of the previous two years, the dressed weight of cattle slaughtered at inspected packing plants declined nearly 12 lb., amounting to 530.7 lb. per carcass. This reduction was mainly attributed to heavy marketings of cows and heifers. Choice and good beef combined accounted for 49.3 p.c. of the total gradings compared with 54.3 p.c. in 1964.

Hogs graded at inspected and approved packing plants in 1965 plus those exported direct from country points totalled 7,077,126, 2.8 p.c. below the previous year. Most of the decrease took place in Ontario and Quebec. Hogs averaged 1 lb. less in weight in 1965, the average being 159.5 lb., but the over-all quality of hog output continued its gradual rise. The percentage of grade A hogs reached a new high of 41.1 p.c., up 2.1 p.c. from 1964.

**22.—Livestock Marketed at Public Stockyards, Packing Plants and Direct for Export, by Province, 1965**

Livestock	Atlantic Provinces	Quebec	Ontario	Manitoba	Saskat- chewan	Alberta	British Columbia	Total
	No.	No.	No.	No.	No.	No.	No.	No.
<b>Cattle</b> .....	<b>54,072</b>	<b>162,540</b>	<b>1,077,974</b>	<b>363,240</b>	<b>704,749</b>	<b>1,163,237</b>	<b>105,424</b>	<b>3,631,236</b>
Totals to stockyards....	3,828	81,047	515,580	247,059	380,552	603,357	13,693	1,850,116
Direct to packers.....	41,260	79,456	513,971	110,530	238,578	530,892	47,240	1,561,927
Direct for export.....	8,984	2,037	48,207	5,199	67,072	13,914	37,658	183,071
Country points in other provinces <sup>1</sup> .....	—	—	216	452	18,547	10,074	6,833	36,122
<b>Calves</b> .....	<b>19,411</b>	<b>368,796</b>	<b>307,022</b>	<b>165,150</b>	<b>250,836</b>	<b>246,827</b>	<b>25,196</b>	<b>1,333,238</b>
Totals to stockyards....	5,511	81,946	115,944	133,879	160,759	136,050	3,748	637,837
Direct to packers.....	12,121	259,270	161,199	27,756	18,690	52,894	12,856	544,786
Direct for export.....	1,779	27,580	29,879	2,402	23,001	13,121	385	98,147
Country points in other provinces <sup>1</sup> .....	—	—	—	1,113	48,386	44,762	8,207	102,468
<b>Hogs</b> .....	<b>211,441</b>	<b>1,482,358</b>	<b>2,637,769</b>	<b>578,849</b>	<b>505,443</b>	<b>1,634,459</b>	<b>33,098</b>	<b>7,063,417</b>
Totals to stockyards....	—	12,669	433,087	189,348	49,210	118,629	—	802,943
Direct to packers.....	211,057	1,469,640	2,199,630	389,123	455,942	1,515,761	33,030	6,274,183
Direct for export.....	384	49	5,052	378	291	69	68	6,291
<b>Sheep and Lambs</b> .....	<b>24,317</b>	<b>45,228</b>	<b>129,888</b>	<b>27,979</b>	<b>52,712</b>	<b>148,154</b>	<b>31,652</b>	<b>459,930</b>
Totals to stockyards....	714	1,463	73,222	10,677	17,315	28,866	694	132,951
Direct to packers.....	23,559	43,765	56,345	16,355	25,553	91,301	28,747	285,625
Direct for export.....	44	—	321	140	1,542	18,135	598	20,780
Country points in other provinces <sup>1</sup> .....	—	—	—	807	8,302	9,852	1,613	20,574
<b>Total Inward Movement—<sup>2</sup></b>								
Cattle.....	1,087	1,694	179,362	33,449	71,387	240,537	979	528,495
Calves.....	90	657	211,003	2,365	15,752	84,325	474	314,666
Sheep and lambs.....	—	509	23,011	2,179	676	7,903	227	34,505

<sup>1</sup> Livestock billed through stockyards to country points outside province of origin.  
<sup>2</sup> Movement to farms from stockyards and plants, and shipments on through-billings from country points in one province to country points in another province.

### Section 3.—Storage and Warehousing

This Section carries data on licensed grain storage and the public warehousing industry only. Reference may be made to the 1963-64 Year Book, pp. 867-871, for information on other types of storage; later statistics may be obtained from the following sources: cold storage and storage of food—Economics Branch of the Canada Department of Agriculture; storage of petroleum and petroleum products—Energy Statistics Section of the Manufacturing and Primary Industries Division, DBS; customs warehouses—Port Administration Branch of the Department of National Revenue.

### Licensed Grain Storage

Total grain storage capacity in Canada, licensed under the provisions of the Canada Grain Act by the Board of Grain Commissioners for Canada, amounted to 673,097,000 bu. at Dec. 1, 1964, which was an increase of 8,776,000 bu. over the capacity at Dec. 1, 1963; capacity was increased by 6,026,000 bu. in western country elevators and by 2,750,000 bu. in lower St. Lawrence ports. The movement of grain in and out of storage during the crop year 1964-65 is given at pp. 908-913; Table 23 gives the amounts in storage at three dates during the year. At July 31, 1965, 69.8 p.c. of the licensed storage capacity was occupied as compared with 61.8 p.c. at the same date in 1964.

**23.—Licensed Grain Storage Capacity and Grain in Store, Crop Years  
1963-64 and 1964-65**

Crop Year and Storage Position	Licensed Storage Capacity	Canadian Grain in Licensed Storage				Proportion of Licensed Storage Capacity Occupied		
		Dec. 1, 1963	Nov. 27, 1963	Apr. 1, 1964	July 31, 1964	Nov. 27, 1963	Apr. 1, 1964	July 31, 1964
<b>1963-64</b>	'000 bu.	'000 bu.	'000 bu.	'000 bu.	p.c.	p.c.	p.c.	
Western country.....	372,460	265,587	271,567	274,794	71.3	72.9	73.8	
Interior, private and mill.....	17,908	9,854	10,742	9,617	55.0	60.0	53.7	
Interior, terminals.....	18,100	6,871	6,494	5,668	38.0	35.9	31.3	
Pacific Coast.....	24,846	12,359	14,981	14,886	49.7	60.3	59.9	
Churchill.....	5,000	4,759	4,759	4,759	95.2	95.2	95.2	
Fort William-Port Arthur.....	106,421	56,859	93,192	72,936	53.4	87.6	68.5	
Georgian Bay and upper Lake ports.....	36,566	26,609	6,721	5,545	72.8	18.4	15.2	
Lower Lake and upper St. Lawrence ports.....	20,100	11,057	5,951	7,048	55.0	29.6	35.1	
Lower St. Lawrence ports.....	55,690	27,652	12,752	13,414	49.7	22.9	24.1	
Maritime ports (excl. Newfoundland).....	7,229	3,667	4,194	1,571	50.7	58.0	21.7	
<b>Totals, 1963-64.....</b>	<b>664,321</b>	<b>425,274</b>	<b>431,353</b>	<b>410,238</b>	<b>64.0</b>	<b>64.9</b>	<b>61.8</b>	
	Dec. 1, 1964	Dec. 2, 1964	Mar. 31, 1965	July 31, 1965	Dec. 2, 1964	Mar. 31, 1965	July 31, 1965	
<b>1964-65</b>	'000 bu.	'000 bu.	'000 bu.	'000 bu.	p.c.	p.c.	p.c.	
Western country.....	378,486	229,906	248,738	302,221	60.7	65.7	79.8	
Interior, private and mill.....	17,908	10,846	10,523	10,177	60.6	59.8	56.8	
Interior, terminals.....	18,100	5,553	5,854	5,572	30.7	32.3	30.8	
Pacific Coast.....	24,846	15,023	12,775	8,906	60.5	51.4	35.8	
Churchill.....	5,000	4,700	4,700	4,393	94.0	94.0	87.9	
Fort William-Port Arthur.....	106,421	63,634	88,932	70,130	59.8	83.6	65.9	
Georgian Bay and upper Lake ports.....	36,566	32,817	12,632	25,016	89.7	34.5	68.4	
Lower Lake and upper St. Lawrence ports.....	20,100	12,543	8,152	10,863	62.4	40.6	54.0	
Lower St. Lawrence ports.....	58,440	40,049	22,318	28,202	68.5	38.2	48.3	
Maritime ports (excl. Newfoundland).....	7,229	6,757	2,724	4,184	93.5	37.7	57.9	
<b>Totals, 1964-65.....</b>	<b>673,097</b>	<b>421,827</b>	<b>417,353</b>	<b>469,664</b>	<b>62.7</b>	<b>62.0</b>	<b>69.8</b>	

### The Public Warehousing Industry

The summary statistics of the warehousing industry presented in Table 24 cover the operations of the majority of firms offering general merchandise and refrigerated storage facilities to the public. Associations and organizations such as co-operatives operating warehouses or storages for their own members are not included nor are packing houses and other firms operating storage facilities in connection with their respective businesses. Small food lockers are not included except where they may be part of a general warehousing business.



## 24.—Summary Statistics of Warehousing of General Merchandise and Refrigerated Goods, 1961-65

Item		1961	1962	1963	1964	1965
Companies reporting.....	No.	108	104	138	152	152
Investment in land, warehouses, etc.....	\$	68,178,081	65,173,924	83,930,051	90,680,374	91,210,700
Warehousing Facilities—						
General merchandise.....	cu. ft.	55,527,385	53,723,491	77,108,607	83,047,067	86,493,705
Refrigerated goods.....	"	32,058,659	34,918,978	45,259,631	44,620,942	44,058,489
Revenue—						
Storage.....	\$	15,931,824	15,906,836	20,883,783	22,471,734	22,102,879
Cartage and moving.....	\$	8,953,590	7,287,727	6,428,081	9,113,060	10,519,532
Miscellaneous.....	\$	6,547,492	6,773,633	9,394,843	10,845,159	12,434,851
Total Revenue.....	\$	31,432,906	29,968,196	36,706,707	42,429,953	45,057,262
Operating expenses.....	\$	29,314,749	27,784,302	33,679,586	39,657,425	42,470,941
Net Operating Revenue.....	\$	2,118,157	2,183,894	3,027,121	2,772,528	2,586,321
Employees, average.....	No.	3,560	3,137	4,033	4,403	4,679
Salaries and wages.....	\$	14,573,924	14,141,772	17,279,113	20,034,223	21,501,114
Motor Vehicles—						
Trucks.....	No.	783	634	602	652	671
Tractors.....	"	158	148	130	165	166
Trailers and semi-trailers.....	"	221	206	158	253	296

<sup>1</sup> Includes storage space for household goods amounting to 1,608,700 cu. ft. in 1961; 997,900 cu. ft. in 1962; 900,000 cu. ft. in 1963; 1,047,090 cu. ft. in 1964; and 969,586 cu. ft. in 1965.

## Section 4.—Co-operative Organizations

In 1964, 2,643 local co-operatives with membership of 1,600,000 reported a total volume of business of \$1,854,600,000 and assets of \$818,000,000. Compared with 1963, the number of reporting co-operatives declined by 62 and the membership by 52,000 but total business increased by \$173,000,000 or 10 p.c. Receipts in 1964 were derived as follows: marketing of farm products, \$1,268,700,000; sales of supplies, \$532,400,000; service revenue (trucking, grinding, chopping, etc.), \$40,000,000; and miscellaneous income (rent, interest, dividends, etc.), \$13,500,000.

Marketing and purchasing associations accounted for the bulk of co-operative business in 1964, having total revenues of \$1,780,600,000, and service and fishermen's associations for the remainder. Membership of marketing and purchasing associations decreased by 34,000 to 1,305,000, and the number of associations declined from 1,583 to 1,546. Sales of both farm products and supplies rose during 1964, the former by 13 p.c. to \$1,268,700,000 and the latter by 7 p.c. to \$532,400,000. Grain accounted for \$118,000,000 of the \$142,600,000 increase in sales of farm products. All provinces reported improved sales of farm products and supplies, with the greatest increases in Saskatchewan and Alberta as a result of higher wheat sales. Grain and livestock, concentrated in the Prairie Provinces, and dairy products, principally from Ontario and Quebec, were the most important farm products, comprising 52 p.c., 16 p.c. and 23 p.c., respectively of total farm marketings. Other farm sales consisted of fruits and vegetables, poultry and eggs, fish and miscellaneous items. The major supplies sold were food products (27 p.c.), feed and fertilizer (30 p.c.), and petroleum (16 p.c.); clothing, hardware, machinery, building materials, seeds and miscellaneous goods made up the remainder. Total assets of marketing and purchasing co-operatives reached \$697,500,000 at the end of 1964, and members' equity therein represented 48 p.c., compared with 45 p.c. in 1963.

Wholesale co-operatives are federations of local co-operatives that act as central marketing agencies for farm products and as wholesalers of farm supplies, machinery and consumer goods. These associations reported sales of farm products and supplies of \$382,300,000 in 1964, an increase of 7 p.c. over the previous year, and total assets of \$122,800,000 of which members' equity represented 36 p.c.

Service co-operatives, which provide such services as rural electrification, medical insurance, transportation, grazing, cold storage and seed cleaning, numbered 1,017 in 1964 with a membership of 281,000, a decrease of 23 and 18,000, respectively, from 1963; these decreases were mainly attributable to the nationalization of rural electrification associations in Quebec. Total volume of business amounted to \$46,839,000 compared with \$39,060,000 in 1963 and consisted of: service revenue, \$28,468,000; miscellaneous income, \$1,056,000; and sales of products and supplies, \$17,315,000. Total assets were \$105,145,000, against \$112,652,000 in 1963. Fishermen's co-operatives reported a membership of 10,000, fish sales of \$21,744,000 and supply sales of \$5,065,000 in 1964; comparable figures for 1963 were 10,000, \$19,525,000 and \$4,741,000, respectively.

Arctic co-operatives operating in the Canadian North have continued to progress steadily; at the end of 1964 they numbered 20, with sales totalling approximately \$1,000,000, share capital of over \$130,000, and reserves and undistributed savings of well over \$200,000. Two new co-operatives were incorporated in 1965.

**25.—Summary Statistics of Co-operative Marketing and Purchasing Associations, 1959-64 and by Province 1963 and 1964**

Year and Province	Associations	Shareholders or Members	Sales of Products	Sales of Merchandise	Total Business <sup>1</sup>
	No.	No.	\$'000	\$'000	\$'000
1959 (crop year ended July 31).....	1,982	1,290,462	963,330	332,943	1,315,167
1960 " " ".....	1,934	1,319,187	973,958	368,090	1,362,596
1961 " " ".....	1,914	1,324,270	1,019,819	391,761	1,430,197
1962 " " ".....	1,877	1,287,562	928,502	423,302	1,372,605
1963 (calendar year).....	1,583	1,339,000	1,100,200	489,000	1,617,900
1964 " " ".....	1,546	1,305,000	1,234,000	522,800	1,780,600
<b>Province</b>					
Newfoundland.....1963	42	9,000	100	5,800	5,900
.....1964	40	8,000	300	6,000	6,300
Prince Edward Island.....1963	21	10,000	4,900	5,000	10,200
.....1964	15	9,000	5,700	5,300	11,100
Nova Scotia.....1963	82	27,000	21,700	20,000	42,400
.....1964	80	27,000	21,400	21,000	42,900
New Brunswick.....1963	56	16,000	11,200	12,800	24,400
.....1964	54	16,000	10,800	13,200	24,300
Quebec.....1963	466	88,000	137,100	110,500	255,200
.....1964	464	86,000	150,000	117,000	272,000
Ontario.....1963	236	144,000	98,700	86,800	191,300
.....1964	234	110,000	111,600	89,200	205,600
Manitoba.....1963	111	182,000	121,200	35,500	159,300
.....1964	112	185,000	122,500	38,500	163,700
Saskatchewan.....1963	333	449,000	355,200	99,100	462,500
.....1964	313	442,000	412,500	107,300	527,500
Alberta.....1963	141	235,000	180,000	53,500	235,000
.....1964	137	246,000	214,000	58,300	273,800
British Columbia.....1963	89	53,000	66,500	34,000	102,000
.....1964	91	51,000	70,300	37,500	108,900
Interprovincial.....1963	6	128,000	108,600	26,000	129,700
.....1964	6	125,000	114,900	29,500	144,500

<sup>1</sup> Includes other revenue.

## 26.—Products Handled by Marketing and Purchasing Co-operatives, 1963 and 1964

Product	1963		1964	
	Associations <sup>1</sup>	Value of Sales	Associations <sup>1</sup>	Value of Sales
	No.	\$'000	No.	\$'000
<b>Marketing</b> .....	<b>709</b>	<b>1,100,200</b>	<b>679</b>	<b>1,234,000</b>
Dairy products.....	307	257,300	307	282,300
Fruits and vegetables.....	106	42,900	119	45,900
Grains and seeds.....	56	525,100	66	643,000
Livestock and livestock products.....	235	210,900	244	196,600
Eggs and poultry.....	103	48,600	97	51,900
Honey.....	7	3,900	6	4,400
Tobacco.....	4	1,100	3	1,600
Wool.....	6	1,700	3	1,600
Fur.....	9	800	11	600
Forest products.....	19	1,900	13	500
Miscellaneous.....	34	6,000	30	5,600
<b>Purchasing</b> .....	<b>1,362</b>	<b>489,000</b>	<b>1,333</b>	<b>522,800</b>
Food products.....	745	130,100	754	141,200
Clothing and home furnishings.....	501	16,000	467	15,600
Hardware.....	734	34,500	757	37,800
Petroleum products.....	632	82,300	610	85,500
Feed, fertilizer and spray material.....	900	148,400	919	155,100
Machinery and equipment.....	271	31,300	238	33,400
Building material.....	338	25,200	384	30,100
Miscellaneous.....	577	21,200	636	24,100
<b>Totals</b> .....	<b>2,071</b>	<b>1,589,200</b>	<b>2,012</b>	<b>1,756,800</b>

<sup>1</sup> Duplication exists as some associations market more than one product.

## Section 5.—Interprovincial Freight Movements\*

Certain interprovincial freight traffic statistics are available on the loadings and unloadings of goods carried by rail, water, motor transport and pipeline. Details of railway freight movement are confined to tons loaded and unloaded by province and contain a certain amount of import and export of goods shipped by water. The figures given in Table 27, however, do not give a precise measure of total interprovincial freight movement by rail; they indicate only the net interprovincial movement of railway freight, which is but one aspect of that trade. For water-borne traffic, Table 28 shows tonnages of all cargoes unloaded at Canadian ports in both interprovincial and intraprovincial trade, by province of origin. Interprovincial and international traffic carried by Canadian registered trucks is shown in Table 29. Pipeline statistics are given in the Transportation Chapter, pp. 859-860.

\* Revised in the Transportation and Public Utilities Division, Dominion Bureau of Statistics.



## 27.—Railway Revenue Freight Movement, by Province, 1964 and 1965

(Class I and II railways operating in Canada)

Province	Loaded		Received from U.S.A. Rail Connections		Totals Carried	
	1964	1965	1964	1965	1964	1965
	tons	tons	tons	tons	tons	tons
Newfoundland <sup>1</sup> .....	1,625,333	4,591,132	—	—	1,625,333	4,591,132
Prince Edward Island..	377,997	376,289	—	—	377,997	376,289
Nova Scotia.....	11,498,836	12,075,096	—	—	11,498,836	12,075,096
New Brunswick.....	4,607,028	4,642,651	191,816	243,816	4,798,844	4,886,467
Quebec.....	51,787,588	52,334,606	2,574,598	3,126,549	54,362,186	55,461,155
Ontario.....	46,409,518	49,044,409	19,422,652	19,534,695	65,832,170	68,579,104
Manitoba.....	7,702,602	8,185,392	395,604	461,195	8,098,206	8,646,587
Saskatchewan.....	19,240,440	17,421,160	179,375	191,542	19,419,815	17,612,702
Alberta.....	16,303,561	15,585,834	216,241	310,076	16,519,802	15,895,910
British Columbia.....	14,516,098	15,610,338	1,287,278	1,462,416	15,803,376	17,072,754
<b>Totals.....</b>	<b>174,069,001</b>	<b>179,866,907</b>	<b>24,267,564</b>	<b>25,330,289</b>	<b>198,336,565</b>	<b>205,197,196</b>
	Unloaded		Delivered to U.S.A. Rail Connections		Totals Terminated	
	1964	1965	1964	1965	1964	1965
	tons	tons	tons	tons	tons	tons
Newfoundland <sup>1</sup> .....	1,920,072	2,139,896	—	—	1,920,072	2,139,896
Prince Edward Island..	602,872	658,369	—	—	602,872	658,369
Nova Scotia.....	10,405,389	11,309,795	—	—	10,405,389	11,309,795
New Brunswick.....	5,087,214	5,519,414	446,756	322,123	5,533,970	5,841,537
Quebec.....	51,829,735	55,313,652	5,033,373	5,460,442	56,863,108	60,774,094
Ontario.....	56,491,138	57,527,782	23,293,131	23,240,318	79,784,269	80,768,100
Manitoba.....	6,871,866	7,050,336	974,315	1,635,677	7,846,181	8,686,013
Saskatchewan.....	3,794,952	4,132,346	1,837,355	1,828,024	5,632,307	5,960,370
Alberta.....	7,016,752	7,199,197	90,493	109,931	7,107,245	7,309,128
British Columbia.....	18,709,794	19,227,293	2,305,254	2,524,060	21,015,048	21,751,353
<b>Totals.....</b>	<b>162,729,784</b>	<b>170,078,080</b>	<b>33,980,677</b>	<b>35,120,575</b>	<b>196,710,461</b>	<b>205,198,655</b>

<sup>1</sup> The 1965 increase reflects largely the commencement of operations by the Wabush Lake Railway.

### 28.—Tonnage of Cargo Loaded and Unloaded at Canadian Ports in Interprovincial Trade, by Province, 1964 and 1965

Year and Province of Unloading	Province of Loading								Canada
	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	B.C. and N.W.T.	
	tons	tons	tons	tons	tons	tons	tons	tons	tons
<b>1964</b>									
Nfld.....	827,652	12,152	985,287	102,972	179,626	15,234	—	5,585	2,128,508
P.E.I.....	859	—	212,290	123,515	2,923	7,658	—	—	347,245
N.S.....	755,272	33,055	269,950	370,700	382,709	217,677	—	1,959	2,031,322
N.B.....	5,075	29,697	620,013	235,868	270,549	20,900	—	3,531	1,185,633
Que.....	280,997	30,827	1,231,270	416,593	5,583,160	9,661,325	8,391	18,234	17,230,797
Ont.....	13,469	—	415,659	—	1,978,738	11,458,181	4,266	—	13,870,313
Man.....	—	—	—	—	1,740	11	424	82	2,257
B.C. and N.W.T.....	12,592	—	—	—	32,744	—	3,118	15,020,254	15,068,708
<b>Totals, 1964.....</b>	<b>1,895,916</b>	<b>105,731</b>	<b>3,731,469</b>	<b>1,249,648</b>	<b>8,432,189</b>	<b>21,380,986</b>	<b>16,199</b>	<b>15,049,645</b>	<b>51,864,783</b>
<b>1965</b>									
Nfld.....	618,614	12,472	1,068,307	96,533	199,134	25,732	—	2,882	2,023,674
P.E.I.....	1,805	24	145,234	142,361	9,946	9,015	—	—	308,385
N.S.....	243,645	21,215	226,129	372,118	429,651	225,418	—	—	1,518,176
N.B.....	499	36,420	736,554	220,685	67,384	11,776	—	—	1,073,318
Que.....	322,517	31,604	1,062,380	383,517	5,564,922	8,874,918	6,540	353	16,246,751
Ont.....	20,774	—	589,497	—	3,019,198	10,473,898	1	2	14,103,370
Man.....	—	—	—	—	11	17	—	67	95
B.C. and N.W.T.....	22,687	—	3,617	—	34,145	—	831	17,759,203	17,820,483
<b>Totals, 1965.....</b>	<b>1,230,541</b>	<b>101,735</b>	<b>3,831,718</b>	<b>1,215,214</b>	<b>9,324,391</b>	<b>19,620,774</b>	<b>7,372</b>	<b>17,762,507</b>	<b>53,694,252</b>

### 29.—Interprovincial and International Traffic by Canadian Registered Trucks, 1963 and 1964

Year and Province or Territory	To— Atlantic Provinces	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	United States	Total
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
<b>1963</b>										
From—										
Atlantic Provinces.....	—	49	5	—	—	—	—	—	165	219
Quebec.....	86	—	1,121	40	—	46	7	—	417	1,717
Ontario.....	8	1,196	—	126	20	95	11	—	513	1,969
Manitoba.....	—	38	198	—	204	122	7	—	13	582
Saskatchewan.....	—	4	4	291	—	79	3	—	27	408
Alberta.....	—	62	64	87	193	—	453	48	87	994
British Columbia.....	1	14	45	10	31	377	—	89	180	747
Yukon and Northwest Territories.....	—	—	—	—	—	6	28	—	—	34
United States.....	31	358	568	20	12	17	88	—	—	1,094
<b>Totals, 1963.....</b>	<b>126</b>	<b>1,721</b>	<b>2,005</b>	<b>574</b>	<b>460</b>	<b>742</b>	<b>597</b>	<b>137</b>	<b>1,402</b>	<b>7,764</b>
<b>1964</b>										
From—										
Atlantic Provinces.....	—	60	15	—	—	—	1	—	283	359
Quebec.....	64	—	1,381	47	6	70	14	—	406	1,988
Ontario.....	28	1,490	—	133	10	127	41	—	1,042	2,871
Manitoba.....	—	54	182	—	246	82	11	—	14	589
Saskatchewan.....	—	3	8	226	—	83	7	—	18	345
Alberta.....	—	81	108	74	183	—	452	149	40	1,087
British Columbia.....	—	22	54	15	15	377	—	111	218	812
Yukon and Northwest Territories.....	—	—	—	—	—	13	24	—	—	37
United States.....	21	236	486	3	24	19	109	—	—	898
<b>Totals, 1964.....</b>	<b>113</b>	<b>1,946</b>	<b>2,234</b>	<b>498</b>	<b>484</b>	<b>771</b>	<b>659</b>	<b>260</b>	<b>2,021</b>	<b>8,986</b>

## PART II.—GOVERNMENT AIDS TO AND CONTROL OF DOMESTIC TRADE

### Section 1.—Controls Affecting the Marketing of Farm Products

#### Subsection 1.—Control of the Grain Trade

The agencies exercising control of the grain trade in Canada include the Board of Grain Commissioners for Canada which, since 1912, has administered the provisions of the Canada Grain Act, and the Canadian Wheat Board which operates under the Canadian Wheat Board Act, 1935.

**The Board of Grain Commissioners for Canada.\***—The Board of Grain Commissioners was established in 1912 under the authority of the Canada Grain Act, 1912 (RSC 1952, cc. 25 and 308 and amendments). It is a quasi-judicial and administrative body of three—a chief commissioner and two commissioners—reporting to the Minister of Agriculture.

The Canada Grain Act has been called the Magna Charta of the Canadian grain trade or, more particularly, of the Canadian farmer, and the Board's chief duties are to ensure that the rights conferred on the different parties by the provisions of the Act are properly protected. Transportation of grain is restricted except from or to licensed elevators, and restriction is placed on the use of established grade names. The Act does not provide for any control or supervision of grain exchanges and the Board of Grain Commissioners has no power or duties in the matter of grain prices.

The Board manages and operates, under semi-public terminal licences, the Canadian Government elevators situated at Moose Jaw and Saskatoon, Sask., Lethbridge, Edmonton and Calgary, Alta., and Prince Rupert, B.C. The Executive Offices of the Board and other principal offices are situated at Winnipeg, Man., but branch offices are maintained at numerous points from Montreal in the east to Victoria in the west. Total personnel is approximately 1,100, including elevator staff.

On a fee basis, the Board provides official inspection, grading and weighing of grain, and registration of warehouse receipts. All operators of elevators in Western Canada and of elevators in Eastern Canada that handle western-grown grain for export, as well as all parties operating as grain commission merchants, track buyers of grain, or as grain dealers, are required to be licensed by the Board annually and to file security by bond or otherwise as a guarantee for the performance of all obligations imposed upon them by the Canada Grain Act or by the regulations of the Board.

To protect the rights of the different parties, the Board has jurisdiction to inquire into and is empowered to give direction regarding any matter relating to the grading or weighing of grain; deductions made from grain for dockage; shortages on delivery of grain into or out of elevators; unfair or discriminatory operation of any elevator; refusal or neglect of any person to comply with any provision of the Canada Grain Act; and any other matter arising out of the performance of the duties of the Board.

In the Prairie Provinces the Board maintains four assistant commissioners—one in Alberta, two in Saskatchewan and one in Manitoba. These assistant commissioners investigate complaints of producers and inspect periodically the country elevators in their respective provinces; all elevators with their equipment and stocks of grain are subject at any time to inspection by officials of the Board.

The Board sets up, annually, Committees on Grain Standards and also appoints Grain Appeal Tribunals to give final decisions in cases where appeals are made against the grading of grain by the Board's inspection officials. To assist in maintaining the

\* Prepared by W. J. MacLeod, Secretary of the Board of Grain Commissioners for Canada, Winnipeg, Man.



uniform quality of the top grades of Red Spring wheat handled through terminal elevators, the Canada Grain Act provides that wheat of these grades shall be stored with grain of like grade only.

The Grain Research Laboratory, located at Winnipeg, is the main centre of research on the chemistry of Canadian grains. It is well staffed and equipped to provide the service required to help maintain and expand domestic and foreign markets for all types of grain. The Laboratory collects and tests samples of various crops to obtain information on the current quality of all grains shipped during the crop year. Fundamental research is also undertaken; the program is directed toward better understanding of what constitutes quality in cereal grains and toward improvement in the methods of assessing quality.

In addition to its duties under the Canada Grain Act, certain other duties are performed by the Board. Under the provisions of the Inland Water Freight Rates Act (RSC 1952, c. 153), the Board maintains records of rates for the carriage of grain from Fort William or Port Arthur, Ont., by lake or river navigation and is empowered to prescribe maximum rates for such carriage. Under the provisions of the Prairie Farm Assistance Act (RSC 1952, c. 213 as amended), the Board collects from licensees under the Canada Grain Act 1 p.c. of the purchase price of wheat, oats, barley, rye, flax and rapeseed purchased by such licensees.

**The Canadian Wheat Board.\***—The Canadian Wheat Board was established under the Canadian Wheat Board Act of 1935 for the purpose of "the marketing in an orderly manner, in interprovincial and export trade, of grain grown in Canada" and now operates under RSC 1952, c. 44 as amended. The Board accomplishes its objective through regulation and agreement. It owns no grain handling facilities but, by entering into agreements with the owners of these facilities, it attempts to bring about an orderly flow of grain through each of the steps involved in merchandising the grain from the producer to the domestic or overseas buyer.

In the selling of wheat, the Board utilizes the services of shippers and exporters. In its sales operations, the Board endeavours to meet the wishes of overseas buyers and, on occasion, enters into direct contracts. When an exporter completes an export sale, in his capacity as an agent of the Board, he is responsible for the transaction; he completes the transaction with the buyer and settles with the Board for the purchase of the wheat from the Board.

When the commercial storage facilities are inadequate to handle all the grain produced, it is necessary for the Board to regulate the flow of grain from the producer to these forward positions. The first step is accomplished by the use of producer's delivery permits issued annually by The Canadian Wheat Board. Every delivery of grain made to country elevators by a producer is entered in his permit book. By regulating the amount of grain delivered by the producer to the country elevator by the use of a quota system and, by apportioning shipping orders to country elevators according to the needs created by sales commitments, the Wheat Board regulates the amount of grain coming into the marketing channel.

The next step is the handling of the grain by the country elevator. The maximum charges for the handling and storing of the grain are set by the Board of Grain Commissioners, but the actual charges are subject to negotiation between the elevator companies and the Wheat Board.

The third step in the marketing process—transporting the grain from the country elevators to large terminal elevators in Eastern Canada, Churchill or on the West Coast—is carried out by the railways. The Wheat Board determines the kinds and grades of grain that are required at the different terminal destinations to meet its sales commitments and informs the elevator companies and the railways of these needs. The maximum tariffs are set by an agreement between the railways and the Government of Canada.

\* Revised by R. L. Kristjanson, Executive Assistant, The Canadian Wheat Board, Winnipeg, Man.

The fourth major step—storing and handling of the grain at terminal elevators—is done in privately or co-operatively owned elevators. Maximum charges are established for this service by the Board of Grain Commissioners.

In the case of oats and barley, the Board's operations are less extensive than those relating to wheat. These two grains are sold in store positions at the terminal elevators at Fort William-Port Arthur and Vancouver. Oats and barley are marketed either on a straight cash basis at prices quoted daily by the Board or on the basis of exchange of futures concluded through the facilities of the Winnipeg Grain Exchange. The Board controls the movement of coarse grains to the Lakehead. The private trade is responsible for the movement of oats and barley from Lakehead or Vancouver positions.

The producer receives payment for his wheat, oats and barley in two or three stages. An initial payment price is established early in the crop year by Order in Council. The initial payment price less the cost of handling grain at the local elevator and the transportation costs to the Lakehead or Vancouver is the initial price received by the producer. This price is a guaranteed floor price in that if the Wheat Board, in selling the grain, does not realize this price and the necessary marketing costs, the deficit is borne by the Federal Treasury. However, with very few exceptions, the Wheat Board has operated without financial aid from the Federal Treasury.

After the end of the crop year, but prior to the final payment being made, if the Wheat Board can confidently foresee a surplus accumulating and if authorized by Order in Council, an interim payment is made to producers. This interim payment is the same amount per bushel to all producers of the same grade of grain. When the Board has sold all the grain or otherwise disposed of it in accordance with the Canadian Wheat Board Act, the Board, if authorized by Order in Council, makes a final payment to producers.

Under the Prairie Grain Advance Payments Act, administered by the Board, producers may receive, through their elevator agents, cash advances on farm-stored grain in accordance with a prescribed formula. The purpose of this legislation is to make cash available to producers pending delivery of their grain under delivery quotas established by the Board. Cash advances are interest-free as far as producers are concerned.

Western Canadian producers receive the price for their grain that the Wheat Board receives, less its operating costs including carrying charge, and the general level of prices received by the Board is determined by competitive conditions in world markets. The only subsidy received by the farmer in the Canadian wheat marketing system is the part-payment of storage costs for wheat made by the Government of Canada. Under provisions of the Temporary Wheat Reserves Act, the Minister of Finance, out of the Consolidated Revenue Fund, pays to the Wheat Board the storage costs on wheat in storage at the end of the crop year in excess of 178,000,000 bu.

### **Subsection 2.—Controls Over Farm Products Other Than Grain\***

The Government of Canada and provincial governments have, through legislation and in other ways, given marketing aids such as those related to research, education, information, inspection, grading and many other service measures of this type, designed to assist in making adjustments in marketing within agriculture and between agriculture and the remainder of the economy. Closely related is regulatory action designed to protect the consumer.

Producers have been concerned about another type of market control, namely that which will give either their organizations or a government agency influence over the price received. In a highly specialized commercial agriculture such as Canada now has, the producer is dependent on the price of his product for his livelihood. Canadian farmers

\* Prepared in the Economics Branch of the Canada Department of Agriculture, Ottawa.

have long attempted to obtain some measure of market control through voluntary organizations, mainly marketing co-operatives. All provinces have made provision for the incorporation of such co-operatives and most, if not all, have provided other assistance to them. In the federal field, the Agricultural Products Co-operative Marketing Act encourages marketing under a co-operative plan.

Other legislation provides for legal control over the marketing of agricultural products, either by a producers' board or a government agency. Legislation of this type includes that pertaining to milk control boards, to producer marketing boards and to industry marketing commissions. Measures pertaining to grain marketing have been reviewed in Subsection 1, pp. 923-925, and the Agricultural Stabilization Act, which provides price support for certain key products is discussed in the Agriculture Chapter, pp. 457-458.

**Product Controls.**—The federal and provincial departments of agriculture co-operate in establishing and enforcing grades of quality standards for various foods. Some control over size and type of containers used for distribution of agricultural products is exercised by the Canada Department of Agriculture and the Department of Trade and Commerce enforces regulations pertaining to weights and measures (see p. 934).

Controls related to health and sanitation in food handling are developed and enforced at all three levels of government—municipal, provincial and federal. Examples of provincial and municipal action include laws pertaining to the pasteurization of milk, inspection of slaughterhouses and sanitary standards in restaurants. At the federal level, inspection by the Health of Animals Branch of the Department of Agriculture of all meat carcasses that enter into interprovincial trade is required. The Food and Drug Directorate of the Department of National Health and Welfare has wide control over the composition of foods sold and over misleading advertising of foods and drugs.

**Marketing Controls.**—*The Agricultural Products Co-operative Marketing Act.*—In the late 1930s, the Federal Government decided to assist orderly marketing by encouraging the establishment of pools which would give to the producer the maximum sales return for his product, less a maximum margin for handling expenses agreed upon in advance. Thus, the Agricultural Products Co-operative Marketing Act and the Wheat Co-operative Marketing Act were passed in 1939. The latter was used in one year only but the Agricultural Products Co-operative Marketing Act, which covers the marketing of all agricultural products except wheat, has continuously served agricultural producers since 1939.

The purpose of this Act is to aid farmers in pooling the returns from sale of their products by guaranteeing initial payments and thus assisting in the orderly marketing of the product. The Government may undertake to guarantee a certain minimum initial payment to the producer at the time of delivery of the product, including a margin for handling; sales returns are made to the producer on a co-operative plan. The guaranteed initial payment may be up to a maximum of 80 p.c. of the average price paid to producers for the previous three years, the exact percentage to be recommended by the Minister of Agriculture who enters into an agreement with the selling agency for the product.

Agreements have been made under this Act pertaining to a wide variety of agricultural products. In 1964 the only agreement made was with respect to apples for processing.

**Milk Control Legislation.**—Most of the provinces enacted milk control legislation before 1940. Many of them finance these milk-control agencies out of public funds, others finance through the collection of licence fees and assessments from those engaged in the fluid milk industry, and some combine the two methods. Most milk-control agencies have authority to carry out some system of licensing which provides for the revocation of such licences if those engaged in the fluid milk business do not conform with the orders of the milk control board.

In all provinces with such boards, the milk control board sets the minimum price which distributors in specified markets may pay producers for Class I milk, that is, milk actually sold for fluid consumption. In Ontario and British Columbia, formulas are taken



as a guide in the setting of minimum prices. Most provinces also set either minimum or fixed wholesale and retail prices for fluid milk. The wholesale and retail prices are fixed in Prince Edward Island, Nova Scotia and Saskatchewan; minimum prices are established in New Brunswick, Quebec and Alberta. However, maximum but not minimum prices are set in Manitoba and no control is exercised over milk prices at the wholesale and retail levels in Ontario and British Columbia; in these three provinces some degree of price competition between store and home delivery sales has developed.

The powers given to or requirements made by milk control boards include: (1) authority to inquire into all matters pertaining to the fluid milk industry, to define market areas, to arbitrate disputes, to examine the books and records of those engaged in the industry, to issue and revoke licences, and to establish a price for milk, and (2) authority to require a bond from distributors, periodic reports from distributors, payments to be made to producers by a certain date each month, distributors to give statements to suppliers, distributors to give notice before ceasing to accept milk from any producer, producers to give notice before ceasing to deliver milk to any distributor, and the prohibition of distributors requiring capital investment from producers.

At the national level, a *Canadian Dairy Commission* has been established recently which will take over its full operating function on Apr. 1, 1967. This is a new departure in the area of agricultural marketing; it is the first time with any farm product that a national board and provincial boards have authority to deal with the same industry in their respective areas of jurisdiction. The Canadian Dairy Commission will complement provincial function in that its responsibility will be regulating the marketing and pricing of milk, and perhaps milk products, that move in interprovincial or international trade. Briefly, the function of the Commission is to provide efficient producers of milk and cream with the opportunity of obtaining a fair return for their labour and investment and to provide consumers with a continuous and adequate supply of dairy products of high quality. The Commission, beginning Apr. 1, 1967, will be the agency to administer the funds provided by the Federal Government for stabilization purposes.

*Producer Marketing Boards.*—During the 1930s strong support developed for legislation whereby agricultural producers could exercise legal authority under certain conditions to control the marketing of their produce. The Natural Products Marketing Act of 1934 attempted to provide this power at the federal level but proved *ultra vires*. The Natural Products Marketing (British Columbia) Act 1936 was *intra vires* of provincial government powers and provided the model from which marketing board legislation has evolved in all ten provinces.

While marketing board legislation has been revised from time to time on the basis of experience and there are variations in detail from province to province, the same basic powers are given to producers in all provinces. These powers include authority for a duly constituted producer board to control the marketing of 100 p.c. of a specified commodity produced in a designated area. A producers' board, in at least some provinces, may set production quotas for each farmer. One producers' board may control the marketing of several related commodities and the designated area may be either the whole or part of a province. A producer vote is usually required to establish a producer marketing board whose powers are delegated either by a provincial marketing board, which has certain supervisory authority, or by the Lieutenant-Governor in Council.

The powers of a producers' board provided by provincial legislation are necessarily limited to intraprovincial trade. Under the Agricultural Products Marketing Act, the Federal Government may delegate to a marketing board with respect to interprovincial and export trade similar powers to those obtained with respect to intraprovincial trade under provincial authority. This Act also gives the Governor in Council the right to authorize a provincial marketing board to impose and collect levies from persons engaged in the production and marketing of commodities controlled by it for the purposes of the board, the creation of reserves and equalization of returns.

In 1964 there were 88 such marketing boards organized in Canada, 54 of which were in the Province of Quebec and 17 in Ontario; each of the other provinces with the exception of Newfoundland had one or more boards. It is estimated that about one seventh of the 1964 farm cash income was received from sales made under the control of provincial marketing board plans, including the following commodities: hogs, certain dairy products, poultry, wool, tobacco, wheat, soybeans, sugar beets, potatoes, other vegetables, fruits, seed corn, white beans, honey, maple products and pulpwood. As at Oct. 31, 1965, 38 of these provincial boards had received an extension of powers for purposes of inter-provincial and export trade from the Federal Government. Seven boards had received authority with regard to seven commodities to collect levies in excess of administrative expenses.

## Section 2.—Combinations in Restraint of Trade\*

The purpose of Canadian anti-combines legislation is to assist in maintaining free and open competition as a prime stimulus to the achievement of maximum production, distribution and employment in a system of free enterprise. To this end, the legislation seeks to eliminate certain practices in restraint of trade that serve to prevent the nation's economic resources from being most effectively used for the advantage of all citizens.

By amendments that came into force on Aug. 10, 1960 (SC 1960, c. 45), all the provisions of the anti-combines legislation which previously had been divided between the Combines Investigation Act (RSC 1952, c. 314) and the Criminal Code were amended and consolidated in the Act. The substantive provisions now are contained in Sects. 2, 32, 33, 33A, 33B, 33C and 34 of the Combines Investigation Act. The Act was enacted in 1923 and was amended extensively in 1935, 1937, 1946, 1949, 1951 and 1952 as well as in 1960.

Sect. 32, generally speaking, forbids in Subsect. (1) combinations that prevent or lessen "unduly" competition in the production, manufacture, purchase, barter, sale, storage, rental, transportation or supply of an article of trade or commerce or in the price of insurance. Subsect. (1) derives from Sect. 411 of the Criminal Code which was enacted originally in 1889. Although Subsect. (2) provides that no person shall be convicted for participation in an arrangement relating only to such matters as the exchange of statistics or the defining of product standards, etc., Subsect. (3) provides that Subsect. (2) does not apply if the arrangement has lessened or is likely to lessen competition unduly in respect of prices, quantity or quality of production, markets or customers or channels of distribution, or if the arrangement "has restricted or is likely to restrict any person from entering into or expanding a business in a trade or industry". Subsect. (4) provides that, subject to Subsect. (5), no person shall be convicted for participation in an arrangement which relates only to the export trade. Subsect. (5) provides that Subsect. (4) does not apply if the arrangement has had or is likely to have harmful effects on the volume of export trade or on the businesses of Canada competitors or on domestic consumers.

Sects. 2 and 33 make it an offence to participate in a merger that has or is likely to have the effect of lessening competition to the detriment or against the interest of the public. These Sections also make it an offence to participate in a monopoly that has been operated or is likely to be operated to the detriment or against the interest of the public.

Sect. 33A deals with what are commonly called "price discrimination" and "predatory price cutting". It provides that a supplier may not make a practice of discriminating among those of his trade customers who come into competition with one another by giving one a preferred price which is not available to another if the second is willing to buy in like quantities and qualities as the first; it also forbids a supplier from selling at prices lower in one locality than in another, or unreasonably low anywhere, if the effect or tendency of such policy is to lessen competition substantially or eliminate competitors or the policy is designed to have such effect.

\* Revised by D. H. W. Henry, Q.C., Director of Investigation and Research, Combines Investigation Act, Department of the Registrar General, Ottawa.



Sect. 33B provides that where a supplier grants advertising or display allowances to competing trade customers he must grant them in proportion to the purchases of such customers; any service he exacts in return must be such that his different types of customers are able to perform; and if such customers are required to incur expenses to earn such allowances, such expenses also must be proportionate to their purchases.

Sect. 33C makes it an offence for any person, for the purpose of promoting the sale or use of an article, to make any materially misleading representation to the public concerning the price at which such or like articles have been, will be or are ordinarily sold.

Sect. 34 prohibits a supplier of goods from prescribing the prices at which they are to be resold by wholesalers or retailers or from cutting off supplies to a merchant because of the merchant's failure or refusal to abide by such prices, i.e., the practice of "resale price maintenance". The Section also provides that it shall not be inferred that a person practised resale price maintenance simply because he refused or counselled the refusal of supplies to a merchant if there were reasonable cause to believe and the supplier did believe that the merchant was making a practice of using articles of such supplier as "loss-leaders" or as bait advertising or was making a practice of engaging in misleading advertising in respect of such articles or of not providing services that purchasers of such articles might reasonably expect.

The Director of Combines Investigations and Research is responsible for investigating combines and other restrictive practices, and the Restrictive Trade Practices Commission is responsible for appraising the evidence submitted to it by the Director and the parties under investigation, and for making a report to the Registrar General of Canada. When there are reasonable grounds for believing that a forbidden practice is engaged in, the Director may obtain from the Commission authorization to examine witnesses, search premises, or require written returns. After examining all the information available, if the Director believes that it proves the existence of a forbidden practice, he submits a statement of the evidence to the Commission and to the parties believed to be responsible for the practice. The Commission then sets a time and place at which it hears argument on behalf of the Director in support of his statement, and hears argument and receives evidence on behalf of any persons against whom allegations have been made in the statement. Following this hearing, the Commission prepares and submits a report to the Registrar General, ordinarily required to be published within thirty days.

Under the provisions of the Act, general inquiries may be made into restraints of trade which, although not forbidden or punishable, may affect the public interest. The courts, including the Exchequer Court of Canada, in addition to imposing punishment for a contravention of the legislation, may make an order restraining persons from embarking on, continuing or repeating a contravention or directing the dissolution of a merger or monopoly as the case may be. Application also may be made to the courts for such an order in lieu of prosecuting and convicting for a contravention of the legislation. Prosecutions for offences against the substantive provisions of the legislation (other than Sect. 33C which is punishable only on summary conviction) may be taken either in the provincial courts or with the consent of the accused in the Exchequer Court of Canada.

In the period Jan. 1, 1964 to June 30, 1966, the following reports of inquiries under the legislation were published:—

- (1) Alleged Combine in the Matter of a Call for Tenders by the Town of Duvernay for the Construction of Sewers and Water Mains.
- (2) Sale of Plumbing and Heating Supplies and Related Products in the City of Montreal and Elsewhere in the Province of Quebec.
- (3) Production, Distribution and Supply of Newspapers in the Sudbury-Copper Cliff Area.
- (4) Distribution, Supply and Sale of Plumbing Supplies and Related Products (Alberta).
- (5) Road Surfacing in Ontario.
- (6) Ottawa Milk Pricing, November 1961.
- (7) Pricing Practices in the Pencil Industry.



- (8) Monopoly in Distribution of Propane—British Columbia.
- (9) Thomson Newspapers' Acquisition of the Fort William Times-Journal.
- (10) Shipping Conference Arrangements and Practices.
- (11) Street Paving Tenders in the City of Hull.
- (12) The John Street Pumping Station Contract, Metropolitan Toronto.
- (13) Distribution and Pricing of Pesticides.
- (14) Pricing Practices of Miss Mary Maxim Ltd.
- (15) Pricing of Ready-Mixed Concrete, Windsor, Ontario.

These reports and copies of the annual reports under the Act may be obtained from the Queen's Printer or the office of the Director of Investigation and Research, Combines Investigation Act, Department of the Registrar General, Ottawa.

### Section 3.—Control and Sale of Alcoholic Beverages

The retail sale of alcoholic beverages in Canada is controlled by provincial and territorial government liquor control authorities. Alcoholic beverages are sold directly by most of these liquor control authorities to the consumer or to licensees for resale. However, in some provinces beer and wine are sold directly by breweries and wineries to consumers or to licensees for resale. During the year ended Mar. 31, 1965, provincial government liquor control authorities operated 1,101 retail stores.

Table 1 shows revenue from administration of liquor control by provincial and territorial governments. Details are given in DBS report, *The Control and Sale of Alcoholic Beverages in Canada* (Catalogue No. 63-202).

#### 1.—Provincial Revenue from Administration of Liquor Control, Years Ended Mar. 31, 1964 and 1965

NOTE.—Figures include revenue collected directly by the provincial and territorial governments as well as revenue of the liquor authorities, but exclude revenue resulting from a general retail sales tax on alcoholic beverages levied by eight provinces.

Province or Territory	1964			1965		
	Net Income from Sales <sup>1</sup>	Sales Tax, Licences and Permits, and Other	Total	Net Income from Sales <sup>1</sup>	Sales Tax, Licences and Permits, and Other	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	2,783	2,634	5,417	3,408	4,224	7,632
Prince Edward Island.....	1,498	515	2,013	1,684	591	2,275
Nova Scotia.....	13,066	379	13,445	13,662	405	14,067
New Brunswick.....	10,099	313	10,417	11,422	364	11,786
Quebec.....	45,600	20,036	65,636	39,621	20,930	60,551
Ontario.....	70,748	27,631	98,379	84,920	29,616	114,536
Manitoba.....	13,233	3,440	16,673	15,412	3,409	18,821
Saskatchewan.....	15,711	391	16,102	16,765	416	17,181
Alberta.....	25,807	1,628	27,435	26,640	1,691	28,331
British Columbia.....	32,514	606	33,120	35,129	626	35,755
Yukon Territory.....	915	113	1,028	880	116	996
Northwest Territories.....	903	82	985	988	72	1,060
<b>Canada.....</b>	<b>232,877</b>	<b>57,773</b>	<b>290,650</b>	<b>250,531</b>	<b>62,460</b>	<b>312,991</b>

<sup>1</sup> After provision for depreciation on fixed assets and capital expenditure met out of operating income; includes commission on general sales tax collections.

Specified revenue of the Federal Government from alcoholic beverages comprising excise duties, excise taxes, customs duties and certain fees and licences in that connection is shown in Table 2.

## 2.—Specified Revenue of the Federal Government from Alcoholic Beverages, Years Ended Mar. 31, 1961-65

NOTE.—Figures exclude revenue from the general sales tax which is not available by commodities.

Nature of Levy	1961	1962	1963	1964	1965
	\$'000	\$'000	\$'000	\$'000	\$'000
<b>On Spirits</b> .....	<b>139,823</b>	<b>143,616</b>	<b>152,907</b>	<b>155,545</b>	<b>165,638</b>
Excise duty.....	108,502	113,689	122,021	129,399	134,716
Licences.....	8	8	8	9	8
Import duty.....	31,313	29,919	30,878 <sup>1</sup>	26,137	30,914
<b>On Beer</b> .....	<b>91,165</b>	<b>93,257</b>	<b>98,354</b>	<b>103,116</b>	<b>105,685</b>
Excise duty.....	90,971	93,051	98,097	102,914	105,386
Licences.....	3	3	3	3	3
Import duty.....	191	203	254 <sup>1</sup>	199	296
<b>On Wine</b> .....	<b>4,920</b>	<b>5,223</b>	<b>6,417</b>	<b>5,504</b>	<b>6,634</b>
Excise taxes.....	3,224	3,350	3,727	3,814	4,092
Import duty.....	1,696	1,873	2,690 <sup>1</sup>	1,690	2,542
<b>Totals<sup>2</sup></b> .....	<b>235,908</b>	<b>242,096</b>	<b>257,678</b>	<b>264,165</b>	<b>277,957</b>

<sup>1</sup> Includes an import surcharge of 15 p.c. ad valorem effective from June 25, 1962 to Feb. 20, 1963, when it was reduced to 10 p.c. ad valorem. The import surcharge was removed entirely as of Apr. 1, 1963. <sup>2</sup> Drawbacks and refunds of duties and taxes have not been deducted.

Table 3 shows the value of sales of alcoholic beverages in 1963-65 but it should be noted that these figures do not always represent the final retail selling price of alcoholic beverages to the consumer because, when sold to licensees, only the selling price to licensees is known.

## 3.—Value of Sales of Alcoholic Beverages, Years Ended Mar. 31, 1963-65

Province or Territory	Spirits			Wines		
	1963	1964	1965	1963	1964	1965
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	6,353	6,683	7,421	620	635	631
Prince Edward Island.....	2,828	2,939	3,308	308	345	367
Nova Scotia.....	17,668	18,483	19,504	2,996	2,902	2,914
New Brunswick.....	12,733	13,094	15,177	2,579	2,764	2,741
Quebec.....	103,479	109,084	94,979	19,676	21,259	19,339
Ontario.....	185,461	203,356	222,104	23,696	26,287	28,752
Manitoba.....	23,355	24,434	25,890	3,089	3,282	3,597
Saskatchewan.....	18,986	20,855	22,431	3,120	3,350	3,607
Alberta.....	39,023	40,907	42,559	4,532	5,064	5,606
British Columbia.....	56,929	59,595	64,825	7,020	7,903	9,249
Yukon Territory.....	1,099	1,032	1,040	131	169	168
Northwest Territories.....	847	987	1,066	101	121	159
<b>Canada</b> .....	<b>468,761</b>	<b>501,449</b>	<b>520,204</b>	<b>67,868</b>	<b>74,051</b>	<b>77,130</b>
	Beer			Totals		
	1963	1964	1965	1963	1964	1965
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	12,652	13,464	14,428	19,625	20,782	22,480
Prince Edward Island.....	1,663	1,832	2,001	4,799	5,116	5,676
Nova Scotia.....	16,574	17,815	18,351	37,238	39,200	40,799
New Brunswick.....	11,322	12,540	14,026	26,634	28,398	31,944
Quebec.....	115,134	118,842	134,418	238,289	249,185	248,636
Ontario.....	184,806	191,540	199,797	393,963	421,183	450,653
Manitoba.....	30,449	32,626	32,210	55,893	60,342	61,697
Saskatchewan.....	24,464	26,166	26,616	46,560	50,371	52,654
Alberta.....	36,673	36,641	37,044	80,228	82,612	85,209
British Columbia.....	45,643	49,625	50,811	109,592	117,123	124,885
Yukon Territory.....	1,208	1,189	1,146	2,438	2,390	2,354
Northwest Territories.....	926	1,039	1,128	1,874	2,147	2,353
<b>Canada</b> .....	<b>481,504</b>	<b>503,319</b>	<b>531,976</b>	<b>1,018,133</b>	<b>1,078,849</b>	<b>1,129,310</b>

Volume of sales, as shown in Table 4, is a more realistic indicator of trends in consumption, although, as a measure of personal consumption by Canadians, it is subject to the same limitations as value sales in respect of purchases by non-residents.

4.—Volume of Sales of Alcoholic Beverages, Years Ended Mar. 31, 1963-65

Province or Territory	Spirits			Wines		
	1963	1964	1965	1963	1964	1965
	'000 gal.	'000 gal.	'000 gal.	'000 gal.	'000 gal.	'000 gal.
Newfoundland.....	207	216	216	72	70	57
Prince Edward Island.....	88	94	103	37	40	54
Nova Scotia.....	571	603	634	371	381	375
New Brunswick.....	382	391	475	326	345	338
Quebec.....	3,479	3,695	3,061	2,436	2,683	2,253
Ontario.....	6,822	7,466	7,668	3,424	3,702	3,686
Manitoba.....	778	814	828	425	454	485
Saskatchewan.....	631	695	713	461	496	529
Alberta.....	1,193	1,258	1,295	627	696	758
British Columbia.....	1,941	2,044	2,193	1,036	1,199	1,396
Yukon Territory.....	30	28	27	12	16	14
Northwest Territories.....	21	26	26	8	10	13
<b>Canada.....</b>	<b>16,143</b>	<b>17,330</b>	<b>17,239</b>	<b>9,235</b>	<b>10,092</b>	<b>9,958</b>
	Beer			Totals		
	1963	1964	1965	1963	1964	1965
	'000 gal.	'000 gal.	'000 gal.	'000 gal.	'000 gal.	'000 gal.
Newfoundland.....	3,619	3,893	3,668	3,898	4,179	3,941
Prince Edward Island.....	577	622	696	702	756	853
Nova Scotia.....	6,043	6,625	6,875	6,985	7,009	7,884
New Brunswick.....	3,834	4,417	5,246	4,542	5,153	6,059
Quebec.....	77,873	80,635	85,317	83,788	87,013	90,631
Ontario.....	96,492	99,690	103,871	106,738	110,858	115,225
Manitoba.....	12,907	13,768	13,442	14,110	15,036	14,755
Saskatchewan.....	10,625	11,345	11,467	11,717	12,536	12,709
Alberta.....	17,610	18,451	18,679	19,430	20,405	20,732
British Columbia.....	21,888	24,049	24,406	24,865	27,282	27,995
Yukon Territory.....	265	264	266	307	308	307
Northwest Territories.....	219	243	263	248	279	302
<b>Canada.....</b>	<b>251,952</b>	<b>264,002</b>	<b>274,196</b>	<b>277,330</b>	<b>291,424</b>	<b>301,393</b>

## Section 4.—Miscellaneous Aids or Controls

**The National Energy Board.**—The National Energy Board was established by the National Energy Board Act, 1959 (SC 1959, c. 46) for the broad purpose of assuring the best use of energy resources in Canada. The Board is responsible for the regulation in the public interest of the construction and operation of oil and gas pipelines subject to the jurisdiction of the Parliament of Canada, the tolls charged for transmission by such pipelines, the export and import of gas, the export of electric power and the construction of those lines over which such power is exported. The Board is also required to study and keep under review all matters relating to energy within the jurisdiction of the Parliament of Canada and to recommend such measures as it considers necessary or advisable in the public interest



with regard to such matters. The Act also authorizes the extension of the export and import provisions to oil upon proclamation by the Governor in Council. The Board, which reports to the Minister of Energy, Mines and Resources, consists of a chairman, a vice-chairman and three other members.

The *National Oil Policy*, announced in 1961, had the initial objective of attaining certain target levels of oil production, including natural gas liquids. Production, which in 1960 had averaged only 544,000 bbl./day, averaged an estimated 923,000 bbl./day in 1965, an increase of almost 70 p.c. This increase was achieved by greater use of Canadian oil in domestic markets west of the Ottawa Valley and by extension of export sales to the United States and, as a result of the co-operation of the industry, the objectives of the Policy were achieved largely without formal regulation. The *National Power Policy*, announced in 1963, stressed the need for taking full advantage of evolutionary changes in the power industry for the provision of abundant electric energy at lowest possible cost and for a flexible export policy that would permit long-term export of large blocks of power to the United States to assist in the immediate development of large-scale Canadian power projects and the strengthening of Canada's balance-of-payments position. In pursuance of these aims, the Board co-operates with other agencies in the consideration of inter-provincial and international interconnection of electric power systems.

During 1965, the work of the Board included the issuing of 629 certificates, licences and orders, compared with 574 in 1964. Following public hearings, six certificates were issued authorizing the construction of additional oil pipeline facilities and a pipeline to transport liquid petroleum products, and one certificate was issued authorizing the construction of a new international power line; the licences and orders issued concerned the export of gas and electric power, the import of gas, the export of butanes by pipeline and the exemption orders, the latter relating to the construction of pipelines or branches or extensions not exceeding 25 miles in length. The Board also issued numerous orders relating to protection and safety in pipeline operation and carried out field inspections relating to the pressure-testing of new gas and oil pipelines, gas compressor and oil-pumping facilities and other pipeline installations. The financial aspects of operations of pipeline companies under the Board's jurisdiction received continual scrutiny and the rates charged by oil pipeline companies and the contractual arrangements for the purchase, sale and transportation of gas by gas pipeline companies remained under continual review.

During the year, the research work of the Board included: the study of project evaluation and rating procedures; the development of computer programs to simulate gas pipelines, optimize the design of a gas pipeline and schedule pipeline expansions and additions; and, in co-operation with other Government agencies, the design of a general framework for an activity-oriented regional model of the Canadian economy which, among other functions, will permit the rapid evaluation of possible changes in the great number of engineering, economic or policy factors that affect the energy sector of the Canadian economy. In addition, the Board was involved in several special studies, including those on the Lower Nelson River power sites, the St. John River power development, and the massive power failure of Nov. 9, 1965 involving Ontario and the eastern United States. The Board continued work on its comprehensive forecast of all forms of energy and supply and demand in Canada and also continued to co-operate, in energy matters, with the Canadian Standards Association Sectional Committee, the Emergency Supply Planning

Branch of the Department of Defence Production, the Petroleum Planning Committee of the NATO Wartime Oil Organization and the Organization for Economic Co-operation and Development.

**Trade Standards.\***—The Standards Branch of the Department of Trade and Commerce consolidates under one Director the administration of the National Trade Mark and True Labelling Act, the Precious Metals Marking Act, the Weights and Measures Act, the Electricity Inspection Act, and the Gas Inspection Act.

*Commodity Standards.*—On Nov. 26, 1949, Parliament passed the National Trade Mark and True Labelling Act (RSC 1952, c. 191) which provides a framework for the development of the National Standard and true labelling in order to circumvent public deception in advertising. In brief, the use of the National Standard is voluntary and compliance with commodity standards affects only those manufacturers who desire to use the national trade mark. This is exemplified in the National Trade Mark Garment Sizing Regulations which were passed on Mar. 16, 1961. In addition, where manufacturers descriptively label any commodity or container, it must be labelled accurately to avoid public deception. The regulation applying to the labelling of fur garments, for example, has been established as a code of fair practice throughout the merchandising field.

Under the terms of the Precious Metals Marking Act, 1946 (RSC 1952, c. 215), commodities composed of gold, silver, platinum or palladium may be marked with a quality mark describing accurately the quality of the metal. Where such mark is used, a trade mark registered in Canada or for which application for registration has been made must also be applied. Gold-plated or silver-plated articles may also be marked under certain conditions outlined in the Act. The inspection staff of the Standards Branch is engaged in the examination of advertising matter, in verifying the quality of articles offered for sale, and in checking the marks applied.

*Weights and Measures.*—The Weights and Measures Act (RSC 1952, c. 292) prescribes the legal standards of weight and measure for use in Canada; it also requires control of the type of all weighing and measuring devices used for commercial purposes and their periodic verification and surveillance directed toward the elimination of sales by short weight or short measure. During 1965, 661,133 prepackaged articles were checked for weight or measure and 487,582 inspections of devices were made.

*Electricity and Gas Inspection.*—Responsibilities of the Standards Branch, under the Electricity Inspection Act (RSC 1952, c. 94) and the Gas Inspection Act (RSC 1952, c. 129) comprise the testing and stamping of every electricity and gas meter used throughout Canada for billing purposes, the object being to ensure the correct measurement of all electricity and gas sold. Canada is divided into 20 districts for administration of the two Acts and the staff numbers 212. During the year ended Mar. 31, 1965, 1,506,821 meters were tested. In 1964, there were 5,981,778 electricity meters and 1,590,546 gas meters registered in Canada.

**Patents.†**—Letters patent are issued subject to the provisions of the Patent Act (RSC 1952, c. 203), effective since 1935. Applications for protection relating to patents should be addressed to the Commissioner of Patents, Ottawa.

\* Revised by the Standards Branch, Department of Trade and Commerce, Ottawa.

† Revised by the Commissioner of Patents, Ottawa.

## 5.—Patents Applied for, Granted, etc., Years Ended Mar. 31, 1961-65

Item		1961	1962	1963	1964	1965
Applications for patents.....	No.	24,529	25,447	26,409	27,057	27,811
Patents granted.....	"	22,014	21,659	21,225	23,230	23,451
Granted to Canadians.....	"	2,036	1,844	1,682	1,763	1,734
Caveats granted.....	"	281	226	256	266	250
Assignments.....	"	22,587	24,161	24,180	25,313	26,487
Fees received, net.....	\$	1,806,279	1,858,965	1,922,250	2,002,271	2,046,174

The number of Canadian patents granted increased fairly steadily each year from 4,522 at the beginning of the century to 23,451 in the year ended Mar. 31, 1965. Roughly, 68 p.c. of the patents granted resulted from inventions made by residents of the United States, 8 p.c. by residents of Britain and other Commonwealth countries and 5 p.c. by residents of Canada. Printed copies of patents issued from Jan. 1, 1948 to date are available at a nominal fee. The Canadian *Patent Office Record* gives a brief digest of each patent.

Canadian and foreign patents may be consulted at the Patent Office Library. The Library has records of British patents and abridged specifications thereof from 1617 to date, and of United States patents from 1845 to date, as well as many patents, indexes, journals and reports from Australia, New Zealand, South Africa, India, Pakistan, France, Belgium, Austria, Norway, Mexico, Italy, Sweden, the Netherlands, Switzerland, Japan, Egypt, Germany, Ireland, Colombia, Czechoslovakia and Yugoslavia.

**Copyrights, Industrial Designs and Timber Marks.\***—Copyright protection is governed by the Copyright Act (RSC 1952, c. 55) in force since 1924. Protection is automatic without any formality. However, a system of voluntary registration is provided. Application for registration should be addressed to the Commissioner of Patents, Ottawa.

The Act sets out the qualifications for a copyright and its duration: "Copyrights shall subsist in Canada . . . in every original literary, dramatic, musical and artistic work, if the author was, at the date of the making of the work, a British subject, a citizen or subject of a foreign country which has adhered to the Berne Convention and the additional Protocol . . . or resident within Her Majesty's Dominions. The term for which the copyright shall subsist shall, except as otherwise expressly provided by this Act, be the life of the author and a period of fifty years after his death."

Canada belongs to the Universal Copyright Convention. This means that the works of Canadian authors are protected in the United States without the formality of compulsory registration or the obligation of printing in the United States, provided that, from the first publication, the work bears in a prominent place the following identification: ©, followed by the name of the proprietor and the year of publication.

Copyright protection is extended to records, perforated rolls, cinematographic films, and other contrivances by means of which a work may be mechanically performed. The intention of the Act is to enable Canadian authors to obtain full copyright protection in Canada, in all parts of the Commonwealth, in foreign countries of the Copyright Union and in the United States. Protection of industrial designs and of timber marks is afforded under the Industrial Design and Union Label Act and the Timber Marking Act. Registers of such designs and marks are kept by the Copyright Branch of the Patent Office.

\* Revised by the Commissioner of Patents, Ottawa.



**6.—Copyrights, Industrial Designs and Timber Marks Registered, Years Ended  
Mar. 31, 1961-65**

Item		1961	1962	1963	1964	1965
Copyrights registered.....	No.	6,381	6,479	7,279	7,098	7,244
Industrial designs registered.....	"	795	684	788	814	846
Timber marks registered.....	"	—	1	3	2	1
Assignments registered.....	"	1,019	1,213	1,279	1,165	1,021
Fees received, net.....	\$	27,446	28,634	31,145	31,040	32,818

**Trade Marks.\***—The Trade Marks Office, a Branch of the Department of the Registrar General of Canada, administers the Trade Marks Act (SC 1952-53, c. 49) which covers all legislation concerning the registration and use of trade marks and supersedes from July 1, 1954, former legislation enacted under the Unfair Competition Act, the Union Label Act and the Shop Cards Registration Act. Correspondence relating to an application for registration of a trade mark should be addressed to the Registrar of Trade Marks, Ottawa.

Applications are advertised for opposition purposes in the *Trade Marks Journal*, a weekly publication that also gives particulars of every registration of a trade mark and every registration of a registered user. The required fee payable on application for registration of a trade mark is \$25, for advertisement of an application \$15 and for registration of a person as a registered user of a trade mark, \$20.

**7.—Trade Marks Registered, Years Ended Mar. 31, 1961-65**

Item		1961	1962	1963	1964	1965
Trade marks registered.....	No.	4,524	4,438	4,620	4,905	4,824
Trade mark registrations assigned.....	"	3,115	3,335	2,887	3,534	3,685
Trade mark registrations renewed.....	"	1,748	1,961	2,657	3,105	2,821
Certified copies prepared.....	"	1,407	1,412	1,529	1,415	1,866
Fees received, net.....	\$	305,036	336,212	346,387	363,481	388,682

**Subventions and Bounties on Coal.†**—A major problem of the Canadian coal mining industry arises from the fact that its fields are situated far distant from the main consuming markets of the Provinces of Ontario and Quebec while these markets lie in close proximity to the bituminous and anthracite fields of the United States. Transportation subventions, which have been maintained in varying degree during the past 30 years, were designed to further the movement of Canadian coals by equalizing as far as possible their laid-down costs with the laid-down costs of imported coals in various market areas. Since 1963, an addition to subvention regulations has also enabled eastern Canadian coals to be made competitive with imported residual fuel oils in the Atlantic Provinces and the Province of Quebec. Subvention assistance is authorized by annual Parliamentary vote and payments are administered in accordance with regulations established by Orders in Council.

\* Revised by the Registrar of Trade Marks, Department of the Registrar General of Canada, Ottawa.

† Revised by the Dominion Coal Board, Ottawa.

## 8.—Expenditure for Coal Subventions, by Province, 1961-65

NOTE.—Tonnages and expenditures shown in a given year, being on a calendar-year basis, are not necessarily in direct relationship; certain of the amounts include adjustments on movements of previous years.

Province		1961	1962	1963	1964	1965
Nova Scotia.....	ton	2,323,684	2,191,938	2,428,819	2,336,571	3,465,093
	\$	14,208,207 <sup>1</sup>	14,589,764	14,442,122	12,780,461	21,569,607
New Brunswick.....	ton	146,201	114,186	191,765	407,120	582,192
	\$	227,129	221,984	540,351	1,263,668	1,808,219
Saskatchewan.....	ton	104,807	82,511	89,311	128,215	176,224
	\$	83,161	62,359	65,542	93,415	122,547
Alberta and eastern British Columbia.....	ton	38,171	57,539	63,346	51,296	65,006
	\$	96,680	150,595	172,782	145,545	205,071
British Columbia and Alberta export.....	ton	719,840	634,855	716,740	1,001,230	1,060,311
	\$	3,239,279	2,408,653	2,323,118	2,911,292	2,964,107
<b>Totals.....</b>	<b>ton</b>	<b>3,332,703</b>	<b>3,081,029</b>	<b>3,489,951</b>	<b>3,924,432</b>	<b>5,348,826</b>
	<b>\$</b>	<b>17,854,456<sup>1</sup></b>	<b>17,433,355</b>	<b>17,543,915</b>	<b>17,194,381</b>	<b>26,669,551</b>

<sup>1</sup> Includes \$500,000 paid by the Nova Scotia Government as its share of the joint cost of certain Nova Scotia subvention payments.

The Canadian Coal Equality Act (RSC 1952, c. 34), which implemented one of the recommendations of the Royal Commission on Maritime Claims (1926), was designed to assist the Canadian steel industry and only incidentally affects coal. It provides for the payment of 49.5 cents per ton on bituminous coal mined in Canada and converted into coke to be used in the Canadian manufacture of iron and steel. Bounties paid under this authority for the years 1961-65 were as follows:—

Item		1961	1962	1963	1964	1965
Quantity.....	ton	457,950	420,036	482,406	472,968	337,302
Amount.....	\$	226,685	207,918	238,791	234,119	166,964

## PART III.—BANKRUPTCIES AND COMMERCIAL FAILURES

Two series of figures are included in this part which, although closely related as far as subject matter is concerned, cover different aspects of the field of bankruptcies and commercial failures. The first, under the heading of "Administration of Bankrupt Estates" is limited to the supervision, by the Superintendent of Bankruptcy, of the administration of bankrupt estates under the Bankruptcy Act (including the Farmers' Creditors Arrangement Act); it gives information on the amounts realized from the assets as established by debtors and indicates that values actually paid to creditors are invariably very much lower than such estimates alone would imply. It can therefore be assumed that this applies in even greater degree to the more extended fields covered in the second section under the heading of "Returns under the Bankruptcy and Winding-Up Act" which is compiled by the Dominion Bureau of Statistics. This series is limited to bankruptcies and insolvencies made under federal legislation (the Bankruptcy Act and the Winding-Up Act) and, since 1955, includes business failures only (see p. 939). The figures of assets and liabilities are estimates made by the debtor and, because they are not made uniformly, should be accepted with reservations.

The Bankruptcy Act, which became law in 1949 and has since been amended on a number of occasions, was again amended by SC 1966, c. 32. This amendment was instigated by many recent exposures and suggestions of illegal and improper practices by

persons who participate in some form of bankruptcy proceedings or administration, or who may be principals such as a debtor, the insolvent person, or a creditor. The amendment is not a complete revision of the Bankruptcy Act but is an interim measure designed to provide direct and immediate authority in the field of investigation and inquiry and to tighten the procedures and requirements in other areas, such as that of proposals which an insolvent person may make to his creditors or which a bankrupt may make to his creditors in the course of the administration of the estate. In other words, the amendment is intended to provide remedies in situations where it has been shown by experience that abuses of the bankruptcy process are most likely to occur, to correct abuses that have occurred in the administration of small estates and to provide special measures for the orderly payment of debts, thus protecting the public by the elimination of fraudulent practices.

### 1.—Summary Statistics of Estates Closed during 1964 under the Bankruptcy Act

Province or Territory	BANKRUPTCIES UNDER GENERAL PROVISIONS OF THE ACT <sup>1</sup>					
	Estates Closed	Assets as Estimated by Debtors	Liabilities as Estimated by Debtors	Realization by Trustee	Costs of Admin- istration	Costs, as Percentage of Realization
	No.	\$	\$	\$	\$	—
Nfld.....	—	—	—	—	—	—
P.E.I.....	8	190,094	689,762	93,797	10,992	12
N.S.....	19	2,736,734	3,988,485	575,449	103,121	18
N.B.....	13	161,045	343,902	49,358	15,039	31
Que.....	1,426	17,040,244	36,449,096	4,084,033	1,689,588	41
Ont.....	1,229	31,706,117	57,470,353	12,204,272	2,254,172	18
Man.....	38	2,369,664	2,955,936	151,734	63,854	42
Sask.....	33	206,341	794,495	67,872	24,714	36
Alta.....	92	4,786,501	8,080,437	2,033,061	445,009	22
B.C.....	113	7,392,902	12,698,668	2,342,872	574,936	24
N.W.T.....	1	58,680	151,418	5,473	3,100	57
<b>Totals.....</b>	<b>2,972</b>	<b>66,648,322</b>	<b>123,622,552</b>	<b>21,607,921</b>	<b>5,184,525</b>	<b>24</b>
	BANKRUPTCIES UNDER GENERAL PROVISIONS OF THE ACT <sup>1</sup>			PROPOSALS UNDER SECT. 27(1) (a)		
	Paid to Creditors	Retained by Secured Creditors	Average Percentage Recovered by Creditors	Proposals Closed	Unsecured Liabilities as Estimated by Debtors	Paid to Unsecured Creditors
	\$	\$		No.	\$	\$
Nfld.....	—	—	—	—	—	—
P.E.I.....	82,805	72,130	22	—	—	—
N.S.....	472,328	784,252	31	1	34,445	9,620
N.B.....	34,319	56,971	27	—	—	—
Que.....	2,394,445	7,770,291	23	127	5,979,567	1,228,103
Ont.....	9,950,100	12,847,799	40	79	8,964,434	1,624,960
Man.....	87,880	1,097,143	40	2	41,598	13,405
Sask.....	43,158	65,225	14	3	256,521	40,920
Alta.....	1,588,052	627,549	27	—	—	—
B.C.....	1,767,936	2,646,768	35	6	1,275,883	269,605
N.W.T.....	2,373	—	2	—	—	—
<b>Totals.....</b>	<b>16,423,396</b>	<b>25,968,128</b>	<b>34</b>	<b>218</b>	<b>16,552,448</b>	<b>3,186,613</b>

<sup>1</sup> Includes summary administration provisions of the Bankruptcy Act.



**Returns under the Bankruptcy and Winding-Up Acts.\***—The DBS statistics concerning bankruptcies and insolvencies cover only the failures coming under federal legislation, i.e., the Bankruptcy Act and the Winding-Up Act. The figures of Table 2 cover business failures only, excluding failures of individuals such as wage-earners, salesmen and executive personnel.

\* Prepared by the Business Finance Division, Dominion Bureau of Statistics.

## 2.—Bankruptcies and Insolvencies under Federal Legislation, by Province, 1956-65

Year	Atlantic Provinces	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
	No.	No.	No.	No.	No.	No.	No.	No.
1956.....	37	1,265	507	23	34	41	60	1,967
1957.....	54	1,359	630	26	32	55	57	2,213
1958.....	36	1,376	545	28	18	51	71	2,125
1959.....	36	1,366	658	26	20	47	76	2,229
1960.....	48	1,638	914	34	28	46	120	2,828
1961.....	47	1,450	932	39	25	62	104	2,659
1962.....	33	1,694	1,177	47	36	94	109	3,190
1963.....	60	1,987	1,389	45	37	67	92	3,677
1964.....	67	1,872	1,281	53	30	80	116	3,499
1965.....	43	1,748	1,248	41	22	103	90	3,295

## 3.—Bankruptcies and Insolvencies under Federal Legislation, by Branch of Business, 1956-65

Year	Agriculture, Forestry, Fishing, Trapping and Mining	Manu- fac- turing	Con- struc- tion	Transpor- tation, Communi- cations and Storage	Trade	Finance and Public Utilities	Service	Not Classified	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.
1956.....	58	342	375	83	782	28	246	53	1,967
1957.....	80	366	372	109	928	40	244	74	2,213
1958.....	67	356	367	105	882	42	295	11	2,125
1959.....	81	374	449	76	906	36	307	—	2,229
1960.....	100	323	619	129	1,229	65	363	—	2,828
1961.....	86	285	470	113	1,234	69	402	—	2,659
1962.....	93	326	573	143	1,496	82	477	—	3,190
1963.....	111	365	714	166	1,634	110	577	—	3,677
1964.....	146	327	706	181	1,492	92	555	—	3,499
1965.....	151	346	628	193	1,359	115	503	—	3,295

## 4.—Estimated Liabilities of Bankruptcies and Insolvencies, 1956-65

Year	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1956.....	2,049	32,704	21,842	5,223	2,437	64,254
1957.....	2,508	37,266	31,349	5,683	3,056	79,863
1958.....	4,493	40,250	17,884	4,672	5,479	72,778
1959.....	2,302	50,034	34,156	3,866	5,429	95,786
1960.....	3,568	61,851	91,090	7,732	10,307	174,548
1961.....	4,714	49,133	48,352	7,075	7,246	116,520
1962.....	2,566	77,002	55,946	6,843	7,083	149,440
1963.....	3,788	91,467	84,260	8,330	7,757	195,602
1964.....	5,863	111,172	71,193	12,144	8,362	208,734
1965.....	2,513	107,182	258,934	15,234	9,787	393,650

## 5.—Bankruptcies and Insolvencies, by Industry and Economic Area, 1965

Industry	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia	Total	Total Liabilities
	No.	No.	No.	No.	No.	No.	\$'000
<b>Primary Industries.....</b>	<b>1</b>	<b>65</b>	<b>66</b>	<b>11</b>	<b>8</b>	<b>151</b>	<b>8,531</b>
<b>Manufacturing.....</b>	<b>2</b>	<b>202</b>	<b>125</b>	<b>10</b>	<b>7</b>	<b>346</b>	<b>41,208</b>
Foods and beverages.....	1	11	9	—	1	22	1,015
Textiles.....	—	1	4	—	—	5	2,000
Clothing.....	—	48	7	1	1	57	7,783
Wood.....	1	47	33	1	2	84	10,666
Paper and allied industries.....	—	18	20	—	—	38	1,827
Primary and fabricated metal, machinery, transportation equip- ment, electrical products and non- metallic mineral products.....	—	48	28	6	2	84	11,697
Chemical.....	—	4	3	1	—	8	1,166
Other industries.....	—	25	21	1	1	48	5,054
<b>Construction.....</b>	<b>6</b>	<b>327</b>	<b>240</b>	<b>38</b>	<b>17</b>	<b>628</b>	<b>52,373</b>
General contractors.....	4	121	91	15	12	243	27,962
Special trade contractors.....	2	206	149	23	5	385	24,411
<b>Transportation, Communications   and Other Utilities.....</b>	<b>—</b>	<b>100</b>	<b>69</b>	<b>21</b>	<b>3</b>	<b>193</b>	<b>7,685</b>
<b>Trade.....</b>	<b>28</b>	<b>725</b>	<b>503</b>	<b>66</b>	<b>37</b>	<b>1,359</b>	<b>65,249</b>
Food.....	6	137	58	7	3	211	8,131
General merchandise.....	3	15	30	4	1	53	3,937
Automotive products.....	7	191	128	20	16	362	12,004
Apparel and shoes.....	3	110	64	8	4	189	8,507
Hardware.....	3	71	56	11	—	141	12,826
Household furniture and appliances.....	3	74	57	7	4	145	5,573
Drugs.....	—	7	10	1	1	19	1,181
Other trades.....	3	120	100	8	8	239	13,090
<b>Finance, Insurance and Real Estate</b>	<b>—</b>	<b>46</b>	<b>62</b>	<b>4</b>	<b>3</b>	<b>115</b>	<b>192,833</b>
<b>Service.....</b>	<b>6</b>	<b>283</b>	<b>183</b>	<b>16</b>	<b>15</b>	<b>503</b>	<b>25,771</b>
Education, health and welfare.....	—	14	11	1	1	27	1,349
Recreational.....	1	33	13	—	5	52	4,184
Business.....	—	28	22	3	2	55	3,051
Personal.....	5	188	120	10	5	328	13,718
Other.....	—	20	17	2	2	41	3,469
<b>Totals.....</b>	<b>43</b>	<b>1,748</b>	<b>1,248</b>	<b>166</b>	<b>90</b>	<b>3,295</b>	<b>393,650</b>

## PART IV.—PRICES\*

## Section 1.—Index Numbers of Wholesale Prices

The term "wholesale prices" refers to transactions that occur below the retail level. It has more of a connotation of bulk purchase and sale than of any homogeneous level of distribution. Wholesale price indexes and individual price series have numerous uses. One of the most important is in escalator contracts which contain a price adjustment clause. Other major uses include: study of replacement and construction costs in investment projects; analysis of price movements of both individual items and commodity groups in relation to purchases and sales; industrial planning and market analysis; valuation for tax purposes and inventory analysis; and study of changes in physical volume. They are also used by business firms abroad in connection with sales and purchases in Canada.

**General Wholesale Index.**—The general wholesale index mainly includes manufacturers' prices but also incorporates those of wholesalers proper, assemblers of primary products, agents and operators of other types of commercial enterprises which trade in commodities of a type, or in quantities characteristic of primary marketing functions. Prices are grouped according to a commodity classification scheme based on chief component material similarities. Indexes classified according to degree of manufacture are also available. In Table 1, the general wholesale index is presented for the period 1938-65. This index is used as a conventional summary figure against which to observe the behaviour of particular price groups such as farm products, raw materials and building materials, for which separate price indexes have been constructed. Table 2 gives, for the years 1956-65, the general wholesale price index and two of its integral classifications—raw and partly manufactured goods, and fully and chiefly manufactured goods; also presented are two related systems—industrial materials and Canadian farm products. Annual price index numbers of non-residential building materials and residential building materials are given for 1956-65 in Tables 3 and 4, respectively. Indexes at a finer level of detail are published regularly in the DBS monthly publication *Prices and Price Indexes* (Catalogue No. 62-002), which also contains current series on retail and security prices. Vol. 23 of that publication is a historical summary reaching back to the year 1867 for some series.

A system of wholesale price indexes called *Industry Selling Price Indexes 1956=100*, refers exclusively to manufacturing industries and includes approximately 100 industry and 175 commodity indexes. DBS Reference Paper No. 62-515 contains tables, explanatory text, charts and weights relating to these indexes; current indexes are published monthly in *Prices and Price Indexes* (Catalogue No. 62-002).

\* Prepared in the Prices Division, Dominion Bureau of Statistics.

## 1.—General Wholesale Index Annual Averages, 1938-65

(1935-39=100)

Year	Average	Year	Average	Year	Average	Year	Average
1938.....	102.0	1945.....	132.1	1952.....	226.0	1959.....	230.6
1939.....	99.2	1946.....	138.9	1953.....	220.7	1960.....	230.9
1940.....	108.0	1947.....	163.3	1954.....	217.0	1961.....	233.3
1941.....	116.4	1948.....	193.4	1955.....	218.9	1962.....	210.0
1942.....	123.0	1949.....	198.3	1956.....	225.6	1963.....	244.6
1943.....	127.9	1950.....	211.2	1957.....	227.4	1964.....	245.4
1944.....	130.6	1951.....	240.2	1958.....	227.8	1965.....	250.4



The general wholesale index averaged 2.0 p.c. higher in 1965, rising to 250.4 from the 1964 average of 245.4. The raw and partly manufactured goods index advanced 2.4 p.c. and the fully and chiefly manufactured goods index was 1.9 p.c. higher. The industrial materials index increased 0.2 p.c. over the same period and the Canadian farm products index rose 4.4 p.c. The latter series, however, is based on preliminary indexes for field products and total farm products, pending receipt of final participation payments from the Canadian Wheat Board.

## 2.—Annual Index Numbers of Wholesale Price Groups, 1956-65

(1935-39=100)

Year	General Wholesale Index	Raw and Partly Manufactured Goods	Fully and Chiefly Manufactured Goods	Industrial Materials	Canadian Farm Products		
					Field	Animal	Total
1956.....	225.6	215.8	231.5	248.2	181.6	246.9	214.2
1957.....	227.4	209.4	237.9	240.3	169.2	258.0	213.6
1958.....	227.8	209.3	238.3	229.8	171.4	274.5	222.9
1959.....	230.6	210.9	241.6	240.2	176.1	271.6	223.9
1960.....	230.9	209.6	242.2	240.4	189.1	264.1	226.6
1961.....	233.3	212.6	244.5	243.2	191.7	270.0	230.9
1962.....	240.0	223.8	249.0	248.0	195.5	286.0	240.8
1963.....	244.6	226.9	254.2	253.5	197.2	275.4	236.3
1964.....	245.4	225.7	256.4	258.3	198.2	267.3	232.7
1965.....	250.4	231.2	261.3	258.7	196.4	289.3	242.9

The price indexes of building materials\* continued to rise in 1965. The non-residential index (1949=100) advanced to 146.8 and was 5.2 p.c. higher than the 1964 average of 139.6. The residential building materials index (1935-39=100, arithmetically converted to the base 1949=100 for comparability with the non-residential index) rose 4.5 p.c. over the same time period to 148.9 from 142.5.

\* Details of weighting and construction and historical series appear in DBS publications *Price Index Numbers of Residential Building Materials, 1926-48* (Catalogue No. 62-505) and *Price Index Numbers of Non-residential Building Materials, 1935-52* (Catalogue No. 62-506). Revised item list and weighting for the electrical component of the residential building materials index, effective July 1960, is available on request.

## 3.—Annual Price Index Numbers of Non-residential Building Materials, 1956-65

(1949=100)

Year	Composite Index	Principal Components						Tile
		Steel and Metal Work	Plumbing, Heating and Other Equipment	Electrical Equipment and Fixtures	Aggregate, Cement and Concrete Mix	Lumber and Lumber Products	Blocks, Brick and Stone	
GROUP WEIGHT AS A PERCENTAGE OF TOTAL.....	...	20.1	21.4	11.5	11.1	10.5	9.1	3.8
1956.....	128.0	139.0	123.4	123.6	117.0	131.5	130.3	120.8
1957.....	130.0	147.7	124.1	118.4	119.4	128.7	134.0	118.5
1958.....	129.8	150.9	123.8	114.0	119.6	126.8	135.7	118.2
1959.....	131.7	152.6	126.0	119.2	118.6	131.3	137.4	118.3
1960.....	132.3	152.9	126.7	119.5	119.8	129.0	139.1	121.0
1961.....	131.1	153.2	126.3	113.8	119.8	127.6	133.0	123.9
1962.....	131.9	153.3	127.4	114.0	122.0	130.8	130.9	125.0
1963.....	135.1	157.1	127.1	118.6	126.0	136.6	135.2	128.9
1964.....	139.6	164.2	129.4	120.3	129.0	147.4	141.9	134.3
1965.....	146.8	177.7	137.1	120.5	133.5	154.6	149.3	143.2

## 4.—Annual Price Index Numbers of Residential Building Materials, 1956-65

(1949=100)

Year	Com- posite Index	Principal Components								
		Cement, Sand and Gravel	Brick, Tile and Stone	Lumber and its Prod- ucts	Lath, Plaster and Insu- lation	Roof- ing Mate- rial	Paint and Glass	Plumb- ing and Heat- ing Equip- ment	Elect- rical Equip- ment and Fix- tures	Other Mate- rials
GROUP WEIGHT AS A PER- CENTAGE OF TOTAL.....	...	7.6	5.0	42.6	11.3	2.9	3.2	18.6	3.8	5.0
1956.....	128.5	117.9	144.9	130.5	110.8	136.3	126.3	120.9	140.5	139.5
1957.....	128.4	120.9	148.2	128.9	115.9	133.0	125.5	126.3	120.6	145.3
1958.....	127.3	123.5	148.7	127.2	118.4	123.6	126.2	127.5	107.8	145.4
1959.....	130.0	121.1	150.9	130.7	119.3	125.6	127.7	128.5	116.3	147.1
1960.....	129.2	121.7	151.9	129.1	120.6	112.6	128.3	130.5	114.3	150.1
1961.....	128.3	120.5	145.0	128.0	122.6	107.1	131.2	131.0	112.0	149.9
1962.....	129.7	120.5	143.6	130.4	126.2	112.0	132.9	128.6	114.0	149.4
1963.....	133.9	123.8	149.3	135.5	127.9	124.2	142.8	130.2	118.1	143.2
1964.....	142.5	127.5	154.6	146.6	134.3	132.1	149.9	134.3	120.0	148.5
1965.....	148.9	132.4	163.2	153.9	139.1	128.0	157.3	141.2	120.1	152.5

**Highway Construction Price Index.**—A system of annual base-weighted and current-weighted bid price indexes (1956=100) relating mainly to provincial highway construction was developed recently, by which price movement is shown for completed units of work such as earth excavation or crushed gravel in place. DBS Reference Paper 62-520 contains tables, explanatory text, charts and weights relating to these indexes. Current indexes are published from time to time in the monthly reports on *Prices and Price Indexes* (Catalogue No. 62-002).

**World Wholesale Price Indexes.**—Price changes within different countries have varied widely during the years. Comparisons of Canadian wholesale price indexes with those of other countries are given in Table 5.

## 5.—Index Numbers of Wholesale Prices in Canada and Other Countries, 1963-65

(1958=100)

SOURCE: *United Nations Monthly Bulletin of Statistics*, June 1966.

Country	1963	1964	1965	Country	1963	1964	1965
Belgium.....	104	109	110	India.....	119	134	145
Brazil.....	664	1,273	.....	Iran <sup>1</sup> .....	104	108	111
Britain.....	102	106	107	Ireland.....	106	113	117
Canada.....	107	108	110	Korea, Republic of <sup>2</sup> .....	149	201	221
Chile.....	229	345	429	Netherlands.....	101	108	111
Denmark.....	108	111	115	New Zealand.....	105	110	111
Dominican Republic (Santo Domingo).....	107	105	117	Norway.....	104	109	112
France.....	117	119	121	Sweden.....	110	115	120
Germany, Federal Republic of.....	104	104	107	Switzerland.....	106	109	109
Greece.....	110	114	119	Turkey.....	143	142	154
				United Arab Republic.....	100	105	113
				United States.....	100	100	102

<sup>1</sup> Base Mar. 21, 1959—Mar. 20, 1960=100.<sup>2</sup> Base 1960=100.

## Section 2.—Consumer Price Index\*

The purpose of the consumer price index is to measure the movement from month to month in retail prices of goods and services bought by a representative cross-section of the Canadian urban population. For a particular article or service, a price index number is simply the price of the article in one period of time expressed as a percentage of its price in a reference period, usually called a base period. However, indexes for individual goods may be combined to form indexes representing prices of broad groups of goods and services. Thus, the consumer price index relates to the wide range of goods and services bought by Canadian urban families. The index expresses the combined prices of such goods each month as a percentage of their prices in the base period 1949.

The group of goods and services represented in the index is called the index "basket" and "weights" are assigned to the price indexes of individual items for purposes of combining them into an over-all or composite index. The weights reflect the relative importance of items in expenditures of middle-size urban families with medium incomes. The basket is an unchanging or equivalent quantity and quality of goods and services. Only prices change from month to month and the index, therefore, measures the effect of changing prices on the cost of purchasing the fixed basket. The basket and weights now used in the index are based on expenditures in 1957 of families of two to six persons, with annual incomes of \$2,500 to \$7,000, living in cities of 30,000 population or over.

### 6.—Consumer Price Index Numbers, 1939-66

(1949=100)

Year	Index	Year	Index	Year	Index	Year	Index
1939.....	63.2	1946.....	77.5	1953.....	115.5	1960.....	128.0
1940.....	65.7	1947.....	84.8	1954.....	116.2	1961.....	129.2
1941.....	69.6	1948.....	97.0	1955.....	116.4	1962.....	130.7
1942.....	72.9	1949.....	100.0	1956.....	118.1	1963.....	133.0
1943.....	74.2	1950.....	102.9	1957.....	121.9	1964.....	135.4
1944.....	74.6	1951.....	113.7	1958.....	125.1	1965.....	138.7
1945.....	75.0	1952.....	116.5	1959.....	126.5	1966.....	143.9

The behaviour of the consumer price index during the years of almost continuous economic growth following the end of the Second World War up to 1959 is discussed in the 1962 Year Book at pp. 928-929 and the movement during 1959-64 in subsequent editions.

Between 1964 and 1965 the rate of consumer price rise advanced, averaging 2.4 p.c., with the largest increases evident in health and personal care (4.6 p.c.), transportation (3.7 p.c.) and food (2.6 p.c.). In 1966 the accelerating trend continued with prices averaging 3.7 p.c. over the previous year. The largest increases occurred in food (6.3 p.c.), clothing (3.8 p.c.) and health and personal care (3.1 p.c.).

\* A comprehensive description of the index is contained in the publication *The Consumer Price Index (1949=100)*—Revision Based on 1957 Expenditures (Catalogue No. 62-513).



## 7.—Consumer Price Index Numbers, 1957-66

(1949=100)

Year	Food	Housing	Clothing	Transportation	Health and Personal Care	Recreation and Reading	Tobacco and Alcohol	Composite Index
GROUP WEIGHT AS A PERCENTAGE OF TOTAL.....	27	32	11	12	7	5	6	100
1957.....	118.6	126.7	108.5	129.9	138.2	129.8	109.4	121.9
1958.....	122.1	129.0	109.7	133.8	145.4	138.4	110.6	125.1
1959.....	121.1	131.4	109.9	138.4	150.2	141.7	114.0	126.5
1960.....	122.2	132.7	110.9	140.3	154.5	144.3	115.8	128.0
1961.....	124.0	133.2	112.5	140.6	155.3	146.1	116.3	129.2
1962.....	126.2	134.8	113.5	140.4	158.3	147.3	117.8	130.7
1963.....	130.3	136.2	116.3	140.4	162.4	149.3	118.1	133.0
1964.....	132.4	138.4	119.2	142.0	167.8	151.8	120.2	135.4
1965.....	135.9	140.9	121.4	147.3	175.5	154.3	122.3	138.7
1966.....	144.5	144.7	126.0	150.8	180.9	158.7	125.1	143.9

Table 8 gives single commodity price relatives for a number of important items entering into the food component of the consumer price index.

## 8.—Urban Average and Relative Retail Prices of Staple Foods, 1957-66

(1949=100)

Year	Beef, sirloin, per lb.		Pork, rib chops, per lb.		Butter, creamery, per lb.		Eggs, "A", fresh, per doz.		Milk, fresh, per qt.	
	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative
	cts.		cts.		cts.		cts.		cts.	
1957.....	84.3	119.7	74.6	131.1	65.7	101.7	56.0	91.0	22.5	126.2
1958.....	94.4	134.1	72.5	127.4	69.2	107.0	57.9	94.1	23.2	130.4
1959.....	101.0	143.5	67.6	118.9	69.6	107.8	54.4	88.4	23.4	131.0
1960.....	97.7	138.8	69.8	122.8	69.8	108.0	54.5	88.6	23.7	133.0
1961.....	97.1	138.0	72.8	128.0	69.9	108.2	56.3	91.5	23.5	132.0
1962.....	107.4	152.5	74.9	131.7	62.1	96.0	53.2	86.5	23.6	132.4
1963.....	103.7	147.4	74.4	130.9	58.5	90.5	58.4	94.9	23.8	134.0
1964.....	99.9	141.9	73.1	128.4	58.9	91.2	50.7	82.4	24.6	138.2
1965.....	106.6	151.4	81.4	143.2	61.4	95.0	54.3	88.3	25.0	140.5
1966.....	116.7	165.8	91.0	160.1	67.1	103.8	64.1	104.2	26.8	150.5
	Flour, per lb.		Tomatoes, canned, 28-oz. tin		Potatoes, 10 lb.		Sugar, granulated, per lb.		Bread, per lb.	
	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative
	cts.		cts.		cts.		cts.		cts.	
1957.....	7.9	113.3	29.1	144.8	42.1	120.8	12.3	133.1	14.3	141.4
1958.....	8.0	114.3	26.6	132.2	45.7	131.2	10.6	114.4	14.8	146.3
1959.....	8.4	119.9	27.3	136.1	48.9	140.3	9.4	101.4	15.2	150.9
1960.....	8.8	125.5	27.8	138.2	58.0	166.5	9.4	101.7	15.6	154.5
1961.....	9.0	128.9	27.0	134.5	47.8	137.2	9.6	103.8	15.9	157.6
1962.....	9.8	141.0	26.6	132.7	47.3	135.9	9.5	103.4	16.4	162.2
1963.....	10.3	147.4	27.1	135.0	51.4	147.7	15.7	170.1	17.2	170.4
1964.....	10.8	156.0	31.5	156.8	59.6	171.1	14.1	153.1	18.1	178.7
1965.....	10.9	157.2	34.5	171.9	76.7	220.3	9.8	106.8	18.1	179.1
1966.....	11.4	164.0	35.8	178.6	64.0	183.7	9.5	103.3	19.0	188.3

**Consumer Price Indexes for Regional Cities.**—Table 9 gives regional consumer price indexes for ten cities or city combinations. These indexes do not show whether it costs more or less to live in one city than in another and should not be used for such comparisons. Their function is to measure percentage changes in retail prices—over a certain time in each city or city combination—of a fixed basket of goods and services representing the level of consumption of a particular group of families.

### 9.—Consumer Price Indexes for Regional Cities, 1957-66

(1949=100)

Year	St. John's, Nfld. (1951=100)	Halifax, N.S.	Saint John, N.B.	Montreal, Que.	Ottawa, Ont.	Toronto, Ont.	Winnipeg, Man.	Saskatoon, Regina, Sask.	Edmonton-Calgary, Alta.	Vancouver, B.C.
1957.....	109.4	119.8	122.6	121.8	123.2	125.2	120.0	119.1	118.8	122.6
1958.....	112.0	122.9	125.3	125.5	125.5	128.6	123.0	122.0	121.4	125.6
1959.....	114.3	125.9	127.7	126.9	126.9	128.9	123.7	123.1	123.0	127.9
1960.....	115.5	127.2	129.2	127.9	128.6	130.4	125.6	124.4	124.1	129.0
1961.....	116.7	128.5	130.2	129.3	130.2	131.2	127.5	125.4	125.0	129.4
1962.....	117.6	130.2	131.4	130.9	131.7	132.4	129.1	127.5	126.2	129.8
1963.....	120.0	131.5	133.4	133.0	134.0	134.6	130.3	128.5	127.6	131.8
1964.....	121.3	132.0	134.8	135.1	136.0	136.9	132.3	129.8	128.2	132.7
1965.....	123.1	134.4	136.9	138.0	138.4	140.2	135.3	131.9	130.1	135.2
1966.....	126.0	138.0	140.4	142.1	143.7	146.4	139.4	135.8	134.4	138.5

**World Retail Price Indexes.**—In order to place changes in Canadian retail prices in perspective with those occurring elsewhere, Table 10 provides consumer price indexes for selected countries for 1963, 1964 and 1965. These indexes measure price changes only within each country and should not be used to compare actual levels of living costs from country to country.

### 10.—Consumer Price Index Numbers in Canada and Other Countries, 1963-65

(1958=100)

SOURCE: *United Nations Monthly Bulletin of Statistics*, June 1966

Country	1963	1964	1965	Country	1963	1964	1965
Belgium.....	106	111	115	Iran.....	127	132	135
Brazil (São Paulo).....	675	1,266	2,048	Ireland.....	110	117	123
Britain.....	112	115	121	Korea, Republic of (Seoul)...	155	201	228
<b>Canada.....</b>	<b>106</b>	<b>108</b>	<b>111</b>	Netherlands.....	113	119	126
Chile (Santiago).....	274	400	515	New Zealand.....	111	115	119
Denmark.....	122	126	134	Norway.....	114	120	125
Dominican Republic (Santo Domingo).....	110	112	110	Sweden.....	115	119	125
France (1962=100).....	105	108	111	Switzerland.....	111	114	118
Germany, Federal				Turkey (Istanbul).....	153	157	164
Republic of.....	111	114	118	United Arab Republic			
Greece (1959=100).....	109	107	110	(Cairo).....	99	103	118
India.....	115	131	143	United States.....	106	107	109

### Section 3.—Consumer Expenditure

A continuing program of surveys of family expenditure in urban areas was begun in 1953, and surveys were conducted since then at two-year intervals up to and including 1959. No expenditure surveys were taken in 1961, the decennial census year, but the regular program was resumed in 1962, when monthly surveys of food expenditure were made throughout the year and a recall survey of the complete budget was made in February and March 1963. Early in 1965 a recall survey of the complete budget was made, referring to the calendar year 1964.

The primary purpose in most of these surveys was to collect information for reviewing and revising, when necessary, the weights of the consumer price index. Therefore the surveys, with the exception of those for 1959 and 1964, have been restricted to cover only the families comparable in composition and income level to the consumer price index target group which was selected for index number purposes from a nation-wide survey conducted in 1947-48. For each of the four survey periods covering 1953, 1955, 1957 and 1962, respectively, the program consisted of a series of monthly surveys in which the major objective was the collection of detailed expenditure data on food, followed by a recall survey of all expenditures and income for the same calendar year. Detailed results for each survey have been published in two series of occasional publications of which the latest are: *Urban Family Food Expenditure, 1962* (Catalogue No. 62-524) and *Urban Family Expenditure, 1962* (Catalogue No. 62-525).

In the 1959 and 1964 survey programs the monthly surveys were omitted and the recall surveys were enlarged in size and scope, referring in 1959 to all families and individuals in cities with populations of 15,000 or over, and in 1964 to all families and individuals in eleven cities. The decision to limit the sample in 1964 to selected major cities was based on the desire to produce representative data for individual cities, in contrast to the broader regional representation afforded by the 1959 survey. Summary results of the 1959 survey appear in the 1962 Year Book at pp. 934-937. Table 11 presented here gives 1964 results for families of two or more, classified by family income. Tables showing expenditures for individuals only and for all families and individuals combined will be published in *Urban Family Expenditure, 1964*.

For the 1964 survey a sample of 3,000 households was drawn from households which had been interviewed earlier in the monthly labour force surveys. The following cities were represented: St. John's, Halifax, Quebec, Montreal, Ottawa, Toronto, Winnipeg, Regina-Saskatoon, Edmonton and Vancouver. The number of usable family records obtained was 2,034, of which 1,723 were families of two or more. Characteristics of sample families are shown at the beginning of the table in the form of averages and percentages.

The classification of expenditures by income level shows how expenditures vary as family income increases. Although dollar amounts expended increase in all consumption groups as income increases, the proportions of total expenditure going to the basic necessities of food and shelter decline with rising income, reflecting the growing importance of other groups as more income becomes available for discretionary spending and as personal taxes account for a larger share of the family dollar.



11.—Patterns of Family Expenditure in Eleven Canadian Cities, by Income Group, 1964  
(Families of two or more persons)

Item	All Classes	Income Group											
		Under \$2,500	\$2,500— 2,999	\$3,000— 3,499	\$3,500— 3,999	\$4,000— 4,499	\$4,500— 4,999	\$5,000— 5,499	\$5,500— 5,999	\$6,000— 6,999	\$7,000— 7,999	\$8,000— 9,999	\$10,000+
<b>Family Characteristics—</b> Families in sample..... No.	1,723	96	64	67	91	112	109	146	130	226	193	239	250
Average—													
Family size..... No.	3.8	2.5	2.7	3.9	3.2	3.4	3.5	3.8	3.9	3.8	3.8	4.0	4.5
Adults, 65 or over..... "	0.2	0.9	0.8	0.3	0.3	0.3	0.3	0.1	0.2	0.2	0.2	0.1	0.1
Adults, 16-64..... "	2.2	1.1	1.3	1.8	1.9	1.9	1.9	2.1	2.1	2.2	2.3	2.5	3.0
Children under 16..... "	1.4	0.5	0.6	1.9	1.1	1.3	1.4	1.8	1.7	1.5	1.4	1.4	1.9
Age of head..... yrs.	45.0	58.5	57.2	45.4	45.0	44.6	46.9	39.7	41.5	43.9	43.4	42.9	46.1
Money income before taxes..... \$	7,065	1,940	2,716	3,262	3,771	4,259	4,765	5,267	5,756	6,500	7,447	8,958	13,904
Net change in assets and liabilities..... \$	280+	324—	203—	300—	231—	177—	70+	115—	87—	178+	96+	545+	1,574+
Earnings..... No.	1.5	0.4	0.9	0.9	1.2	1.1	1.2	1.3	1.4	1.5	1.6	1.8	2.1
Percentage—													
Home owners.....	51	48	48	29	35	31	44	39	47	54	52	62	69
Car owners.....	71	19	43	47	53	54	67	71	77	73	81	83	93
With children under 16.....	61	25	28	69	60	59	60	72	71	65	65	63	62
With persons 65 or over.....	16	54	48	16	19	18	18	5	12	13	14	11	11
Canadian-born.....	68	61	55	76	75	69	65	72	71	69	67	62	72
Wife employed full time.....	15	4	4	2	5	3	5	9	10	16	24	32	21
<b>Average Expenditure—</b>													
Food.....	1,476	784	880	1,155	1,065	1,154	1,262	1,362	1,436	1,435	1,569	1,689	2,113
Shelter.....	1,147	686	780	818	810	933	976	1,051	1,016	1,107	1,224	1,322	1,655
Rented.....	420	307	377	503	486	493	425	521	442	439	446	423	548
Owned.....	424	204	195	121	163	230	324	316	331	399	480	567	784
Other shelter.....	62	4	24	8	6	22	14	27	26	32	61	83	203
Fuel, light, water.....	232	177	184	185	154	183	213	188	217	237	237	259	321
Household operation.....	282	119	146	181	163	186	223	223	223	254	319	338	500
Furnishings and equip- ment.....	313	49	133	165	162	185	218	252	278	314	392	407	514
Appliances.....	85	17	47	67	58	64	77	91	94	88	94	110	140
Other.....	228	32	42	98	104	137	177	153	184	226	293	303	404
Clothing.....	614	132	211	256	322	385	377	448	503	554	681	813	1,188
Transportation.....	870	109	354	223	437	439	477	642	857	788	1,050	1,215	1,609
Car.....	733	54	278	173	353	356	401	552	775	671	915	1,003	1,347
Purchase.....	379	8	135	21	183	145	118	256	439	322	512	610	748
Operation.....	354	46	142	162	170	211	284	297	336	349	403	467	599
Other transportation.....	137	55	87	50	75	83	76	90	82	116	136	211	282
Medical care.....	277	128	176	135	224	239	241	248	235	262	307	288	447
Personal care.....	151	60	79	87	101	115	124	132	142	155	184	200	261

Recreation.....	230	50	62	77	103	101	147	146	202	208	278	299	470
Reading.....	22	22	22	10	34	30	36	35	35	43	47	64	73
Education.....	64	4	14	14	23	48	28	36	38	48	48	64	199
Tobacco and alcoholic beverages.....	279	88	137	189	175	188	231	244	275	283	320	327	428
Other.....	89	25	66	53	74	86	52	86	88	72	97	103	144
Totals, Current Con- sumption.....	5,846	2,276	3,071	3,393	3,688	4,089	4,393	4,907	5,328	5,522	6,515	7,121	9,602
Gifts and contributions	200	69	96	62	112	131	147	138	136	192	201	259	400
Personal taxes.....	650	30	42	70	172	198	299	334	380	532	646	886	1,814
Security.....	336	55	51	92	160	206	224	228	266	320	356	425	717
Totals, Expenditure	7,031	2,429	3,261	3,617	4,132	4,623	5,063	5,597	6,110	6,566	7,719	8,692	12,533
Percentage Distribution of Expenditure—													
Food.....	21.0	32.3	27.0	31.9	25.8	25.0	24.9	24.3	23.5	21.9	20.3	19.4	16.9
Shelter.....	16.3	28.2	23.9	22.6	19.6	20.2	19.3	18.8	16.6	16.9	15.9	15.2	13.2
Rented.....	6.1	12.6	11.6	13.9	11.8	10.7	8.4	9.9	7.2	6.7	6.8	4.9	2.8
Owned.....	6.0	8.4	6.0	3.9	9.9	5.0	6.4	5.6	5.4	6.1	6.2	6.4	6.3
Other shelter.....	0.9	0.2	0.7	0.2	0.1	0.5	0.3	0.6	0.1	0.5	0.8	1.0	1.6
Fuel, light, water.....	3.3	7.0	5.6	5.1	9.7	4.1	4.2	9.4	9.6	9.6	9.7	9.0	9.6
Household operation.....	4.0	4.9	4.5	5.0	3.9	4.0	4.4	4.0	3.6	3.9	4.1	3.9	4.0
Furnishings and equipment	4.5	2.0	4.1	4.6	3.9	4.0	4.3	4.5	4.5	4.8	5.1	4.7	4.1
Appliances.....	1.2	0.7	1.3	1.9	1.4	1.2	1.5	1.7	1.5	1.3	1.2	1.2	0.9
Other.....	3.2	1.3	2.8	2.7	2.5	2.8	2.8	2.8	3.0	3.1	3.9	3.6	3.2
Clothing.....	8.7	6.3	6.5	7.1	7.8	8.3	7.4	8.0	8.2	8.4	8.8	9.4	9.5
Transportation.....	12.4	4.5	11.2	6.2	10.3	9.5	9.4	11.5	12.7	12.0	13.6	14.0	12.8
Cars.....	10.4	2.2	8.5	4.8	8.5	7.7	7.9	9.9	12.7	10.2	11.9	11.5	10.7
Purchase.....	2.4	0.3	4.1	0.6	4.4	3.1	2.3	4.6	4.2	4.3	6.6	6.2	6.0
Operation.....	9.0	1.9	4.4	4.2	4.7	4.6	5.3	4.6	5.3	5.3	5.2	5.4	4.3
Other transportation.....	3.9	2.3	2.7	1.4	4.8	1.8	1.6	3.8	1.8	1.8	1.8	2.3	2.1
Medical care.....	3.9	5.3	5.4	4.3	5.4	5.2	4.8	4.4	3.8	4.0	4.0	3.3	3.6
Personal care.....	2.3	2.5	2.4	2.4	2.4	2.5	2.4	2.4	2.3	2.4	2.4	2.3	2.1
Recreation.....	3.3	2.1	1.9	2.1	2.6	2.2	2.9	2.6	3.3	3.2	3.6	3.4	3.8
Reading.....	0.6	0.9	0.7	0.6	0.8	0.6	0.7	0.6	0.6	0.7	0.6	0.6	0.6
Education.....	0.9	0.2	0.4	0.4	0.6	1.0	0.6	0.6	0.6	0.7	0.6	0.7	1.6
Tobacco and alcoholic beverages.....	4.0	3.6	4.2	5.2	4.2	4.1	4.6	4.4	4.5	4.3	4.1	3.8	3.4
Other.....	1.3	1.0	2.0	1.5	1.8	1.9	1.0	1.5	1.4	1.1	1.3	1.2	1.1
Totals, Current Con- sumption.....	83.1	93.7	94.2	93.8	89.3	88.4	86.8	87.7	87.2	84.1	84.4	81.9	76.6
Gifts and contributions.....	2.8	2.8	2.9	1.7	2.7	2.8	2.9	2.3	2.2	2.9	2.6	3.0	3.2
Personal taxes.....	9.2	1.2	1.3	1.9	4.2	4.3	5.9	6.0	6.2	8.1	8.4	10.2	14.5
Security.....	4.8	2.3	1.6	2.5	3.9	4.5	4.4	4.1	4.4	4.9	4.6	4.9	5.7
Totals, Expenditure.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

## Section 4.—Security Price Indexes

Security price indexes measure, through time, the effect of price change on the value of a portfolio of stocks bought and held by a hypothetical investor (as opposed to the more speculative trader). The portfolio represents stocks of Canadian companies listed on the Toronto, Montreal and Canadian stock exchanges. In the case of the mining and the two supplementary indexes (primary oils and gas, and uraniums), eligible issues are for producing mines and wells only. The number of shares held for each issue is in proportion to the total number of shares outstanding. Prices in the weekly common stock indexes (investors, mining and supplementary indexes) are Thursday's closing quotations. For the monthly preferred stock indexes, prices are monthly weighted averages of the daily closing prices in which weights are daily total sales. The indexes express current prices as a percentage of prices in 1956. Monthly and certain weekly indexes appear in DBS monthly publication *Prices and Price Indexes* (Catalogue No. 62-002) and a weekly DBS report gives indexes on a weekly basis for all groups and sub-groups.

The investors index is comprised of three major groups, with relative importance indicated by percentage weights as follows: industrials, 67.5; utilities, 18.6; and finance, 13.9. Each major group is further divided into industry sub-groups corresponding to the standard industrial classification, adopted as the basis of classification in the revision of the index to the 1956 = 100 base. The mining index is composed of two groups: base metals with a weight of 64.6 p.c. and golds with a weight of 35.4 p.c. The two supplementary indexes of common stocks—primary oils and gas, and uraniums—and the index of preferred stocks are not divided into component groups.

## 12.—Index Numbers of Common Stock Supplementary Indexes and Prices of Mining Stocks, by Month, 1964 to Mid-1966

(1956 = 100)

Year and Month	Supplementary Indexes		Mining Stocks		
	Primary Oils and Gas	Uraniums	Golds	Base Metals	Composite
<b>1964</b>					
January.....	69.5	86.4	104.5	82.5	90.3
February.....	71.6	87.4	105.3	85.0	92.2
March.....	72.2	90.4	107.6	90.2	96.4
April.....	78.7	89.8	106.9	93.0	97.9
May.....	82.1	83.6	109.8	93.1	99.0
June.....	80.5	77.8	111.4	88.2	96.4
July.....	83.3	78.1	112.4	92.1	99.3
August.....	83.7	79.0	112.8	94.5	101.0
September.....	87.0	85.3	115.6	97.9	104.2
October.....	85.1	84.0	125.0	102.6	110.5
November.....	88.5	80.3	130.4	104.0	113.4
December.....	86.3	86.1	138.5	98.5	112.6
<b>1965</b>					
January.....	89.2	104.5	142.6	104.8	118.2
February.....	91.8	114.0	138.0	106.5	117.6
March.....	96.2	109.7	139.2	108.0	119.0
April.....	102.7	118.5	136.5	108.6	118.5
May.....	108.9	134.8	130.2	108.3	116.0
June.....	100.7	130.7	127.1	100.6	110.0
July.....	97.0	120.7	134.3	95.0	108.9
August.....	98.9	130.4	136.2	97.6	111.2
September.....	99.0	133.3	132.2	97.4	109.7
October.....	105.7	147.7	125.4	99.2	108.4
November.....	103.2	148.7	128.6	103.0	112.0
December.....	100.0	141.4	127.0	100.9	110.1
<b>1966</b>					
January.....	107.4	147.8	137.3	110.7	120.1
February.....	119.4	150.8	144.8	109.5	122.0
March.....	112.5	151.8	136.2	105.4	116.3
April.....	110.4	170.9	137.4	112.3	121.2
May.....	101.4	172.4	134.0	104.7	115.1
June.....	101.1	190.0	140.5	103.6	116.7



## 13.—Investors Index Numbers of Common Stocks, by Month, 1964 to Mid-1966

(1956=100)

Year and Month	Industrials										Utilities				Finance			Investors Composite Index						
	Industrial Mines	Foodstuffs	Beverages	Textile and Clothing	Pulp and Paper	Printing and Publishing	Primary Metals	Metal Fabricating	Non-metallic Minerals	Petroleum	Chemicals	Construction	Retail Trade	Industrial Total	Transportation	Pipelines	Telephone		Electric Power	Gas Distribution	Utilities Total	Banks and Loans	Investment and Total	
1964																								
Jan....	152.0	179.6	199.2	253.9	143.6	308.8	106.6	114.2	137.1	104.8	139.1	61.0	194.2	146.2	121.3	161.8	122.9	125.6	236.0	141.6	141.3	162.4	148.6	145.8
Feb....	152.6	178.8	197.8	247.6	144.3	310.8	107.9	113.8	139.7	104.4	139.7	62.0	192.5	146.4	121.8	161.8	122.4	125.9	232.4	140.6	137.4	163.2	146.4	145.4
Mar....	156.0	181.6	201.3	259.0	145.6	311.7	109.9	118.0	140.4	105.4	152.7	58.7	196.8	149.3	127.8	164.4	119.5	128.1	227.8	140.8	134.4	162.4	144.2	147.1
Apr....	165.3	188.5	211.3	268.9	156.2	312.7	118.2	126.5	148.2	112.5	155.7	61.6	212.7	158.0	134.4	169.3	124.7	130.6	227.0	145.7	132.7	164.9	147.8	154.4
May....	171.2	193.1	217.0	280.4	163.5	322.4	123.0	140.9	156.2	116.0	157.1	67.0	224.7	164.4	147.6	176.6	128.4	130.6	227.0	151.2	142.4	165.9	150.6	160.1
June....	166.7	197.3	218.5	287.5	162.4	324.4	120.0	152.4	156.7	114.5	163.4	69.6	228.1	164.0	149.4	178.6	131.2	133.4	233.9	154.0	141.6	170.4	151.6	160.5
July....	170.3	198.2	231.5	295.9	167.8	330.6	122.0	152.5	157.1	116.9	175.1	73.3	242.5	169.1	151.3	185.3	133.0	136.0	246.6	157.2	144.5	170.4	153.5	164.8
Aug....	171.6	198.2	231.5	295.9	167.8	330.6	122.0	152.5	157.1	116.9	175.1	73.3	242.5	169.1	151.3	185.3	133.0	136.0	246.6	157.2	144.5	170.4	153.5	164.8
Sept....	174.8	190.1	230.1	310.2	173.2	330.3	124.3	144.0	154.8	119.2	177.7	77.9	243.3	170.5	171.3	186.4	134.2	136.4	254.7	160.8	148.1	172.3	156.6	166.8
Oct....	181.2	195.4	231.3	325.8	178.7	333.8	125.5	146.4	155.2	121.2	187.9	77.8	254.0	175.4	171.3	191.1	137.7	136.4	256.0	163.7	147.9	174.8	157.3	170.8
Nov....	189.2	197.5	235.8	333.2	173.7	352.0	123.4	146.4	163.2	126.0	190.9	78.2	258.5	178.1	174.4	183.9	142.0	135.6	267.3	167.0	149.7	177.8	159.5	173.6
Dec....	182.2	196.7	231.6	336.8	164.3	349.4	119.1	139.7	164.6	123.0	187.1	76.5	257.1	173.1	178.8	188.9	141.7	125.4	263.5	164.0	148.6	175.4	157.9	169.4
1965																								
Jan....	186.0	203.6	243.5	370.5	173.4	359.4	129.0	147.1	178.4	127.7	193.1	85.2	271.5	181.0	202.6	196.2	148.4	127.4	285.7	173.5	151.0	184.8	162.7	177.2
Feb....	184.7	205.9	250.3	370.4	173.7	367.4	128.6	147.2	180.5	127.9	193.7	87.9	276.3	182.0	213.1	190.9	144.5	127.2	281.0	172.0	152.8	187.7	164.9	177.8
Mar....	191.4	212.1	254.7	393.2	173.7	383.9	130.4	148.5	180.8	128.8	200.4	89.1	278.7	185.3	210.8	187.4	145.7	128.0	281.7	171.6	152.2	187.0	164.2	180.0
Apr....	195.7	221.1	258.2	386.4	174.2	403.3	133.3	151.5	179.2	124.8	193.9	92.1	272.3	187.5	205.2	185.2	142.6	131.8	278.0	169.8	148.3	183.3	160.4	180.5
May....	202.2	228.8	262.5	392.5	167.3	425.7	137.5	146.6	181.5	124.9	193.9	92.1	284.2	190.2	204.6	189.6	142.9	137.2	284.5	173.2	149.8	187.1	162.7	183.7
June....	190.8	217.4	252.9	353.1	157.3	413.9	127.1	138.3	170.5	117.4	182.6	84.8	269.4	180.7	194.2	179.6	138.8	131.7	283.7	166.3	140.5	177.0	153.2	174.0
July....	182.6	210.4	243.9	319.0	147.9	402.8	118.7	130.6	167.1	113.0	173.2	80.4	265.6	171.0	202.8	176.7	136.4	129.6	274.8	162.1	136.6	165.5	146.5	166.0
Aug....	191.4	215.4	243.9	319.0	148.4	415.4	121.4	136.1	167.1	115.6	176.0	80.2	262.8	176.3	202.8	180.1	136.4	129.6	284.0	168.6	137.8	171.2	149.3	171.2
Sept....	197.4	219.5	243.4	333.6	147.7	436.9	123.8	143.5	168.5	117.2	176.5	83.8	281.4	180.6	214.0	180.7	138.3	150.1	298.4	174.3	140.5	172.3	151.5	175.5
Oct....	203.2	240.7	235.3	333.4	142.2	459.9	123.8	143.8	158.9	117.0	170.5	84.8	286.6	182.0	215.7	178.4	136.1	150.1	301.8	173.9	138.3	177.2	151.7	176.4
Nov....	209.8	219.2	234.5	346.0	138.4	472.2	122.4	150.6	156.8	118.0	171.6	87.0	285.2	183.2	223.0	176.7	136.3	158.2	310.4	176.8	134.6	176.7	149.2	177.8
Dec....	203.0	213.9	228.7	331.5	136.6	460.5	121.2	147.9	149.4	113.3	160.9	85.9	273.2	179.0	212.3	176.0	133.7	156.8	315.2	174.4	136.3	168.6	147.5	173.8
1966																								
Jan....	211.6	223.1	239.1	334.6	146.9	474.1	133.6	148.6	158.6	121.4	165.5	90.9	281.3	187.3	212.8	179.2	141.5	164.8	339.4	181.9	147.1	173.5	156.3	182.0
Feb....	210.4	227.0	232.6	362.0	148.2	466.8	134.2	148.3	153.0	123.2	160.2	93.4	277.7	186.7	207.6	175.6	137.6	164.8	338.1	178.3	142.4	171.2	152.4	180.4
Mar....	201.5	219.1	223.5	344.0	149.1	470.4	131.9	148.2	146.2	121.5	154.2	89.2	269.5	181.3	197.6	169.1	133.9	157.3	328.5	172.5	136.9	160.0	144.9	175.0
Apr....	206.6	218.0	221.2	351.0	146.0	488.0	139.4	146.0	154.2	122.6	147.3	84.6	265.5	177.4	189.8	160.8	122.7	162.5	334.4	172.4	133.6	162.4	147.0	176.6
May....	194.4	208.2	206.8	337.7	140.8	478.0	129.2	150.1	143.8	122.6	147.3	84.6	265.5	177.4	189.8	160.8	122.7	162.5	334.4	172.4	133.6	162.4	147.0	176.6
June....	193.2	210.3	212.9	335.6	139.0	480.4	129.5	149.3	143.8	122.4	150.3	78.6	268.3	177.7	201.7	158.5	122.0	154.8	326.4	165.9	135.6	162.3	141.5	170.6

## 14.—Index Numbers of Preferred Stocks, by Month, 1957-66

(1956=100)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Av.
1957.....	93.8	94.1	93.1	92.3	92.1	90.7	90.3	89.9	88.6	87.9	88.8	90.9	91.0
1958.....	92.7	94.1	94.8	95.4	97.2	98.6	97.7	98.3	98.6	97.9	97.9	96.1	96.6
1959.....	95.1	96.0	96.1	96.3	97.4	96.6	96.8	95.8	93.4	90.9	90.3	90.2	94.6
1960.....	89.8	89.5	88.6	88.2	89.6	91.7	93.3	94.1	94.8	94.8	94.6	94.3	91.9
1961.....	95.0	95.2	94.9	96.0	97.1	97.7	98.4	98.3	99.5	100.7	100.6	99.9	97.8
1962.....	101.0	100.9	101.3	101.6	102.0	99.3	96.6	97.0	97.3	96.8	98.1	99.3	99.3
1963.....	102.0	101.5	101.2	101.9	103.9	103.5	102.2	101.6	101.6	102.4	102.6	102.7	102.3
1964.....	102.3	102.4	102.0	102.4	102.2	102.8	103.5	103.6	104.3	104.8	105.7	105.6	103.5
1965.....	106.3	106.8	105.2	104.0	103.7	103.5	102.8	101.3	100.9	100.6	100.0	98.1	102.8
1966.....	99.0	98.6	96.1	93.1	90.9	91.9	92.0	91.5	89.2	88.4	87.8	85.3	92.0

# CHAPTER XXII.—FOREIGN TRADE

## CONSPECTUS

	PAGE		PAGE
SPECIAL ARTICLE: Canada's Participation in the Changing Pattern of World Trade, 1953-66.....	953	Part II.—The Government and Foreign Trade.....	993
Part I.—Foreign Trade Statistics.....	967	SECTION 1. FEDERAL FOREIGN TRADE SERVICES.....	993
SECTION 1. EXPLANATORY NOTES ON CANADIAN TRADE STATISTICS.....	967	SECTION 2. THE DEVELOPMENT OF TARIFFS	1000
SECTION 2. TOTAL FOREIGN TRADE.....	969	Subsection 1. The Canadian Tariff Structure.....	1000
SECTION 3. TRADE BY GEOGRAPHIC AREA..	970	Subsection 2. Tariff and Trade Arrangements with Other Countries as at Sept. 15, 1966.....	1001
SECTION 4. TRADE BY COMMODITY.....	980	Part III.—Travel Between Canada and Other Countries.....	1010
SECTION 5. TRADE BY SECTION AND STAGE OF FABRICATION.....	987		

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

The subject of foreign trade covers more than the treatment of exports and imports of commodities, important though this is. In its broader sense, foreign trade is made up of the total international interchange of goods, services, securities and other financial transactions, all of which are presented in their appropriate relationship in this Chapter and in Section 4 of Chapter XXIV. Following the special article on Canada's Participation in the Changing Pattern of World Trade, Part I gives detailed statistics of that trade. Part II outlines the various ways in which the Federal Government promotes and encourages trade relationships, and contains a brief review of the Canadian tariff structure. Part III contains a review of the extent of travel between Canada and other countries in 1965, with estimates of the amount of money expended for that purpose.

## CANADA'S PARTICIPATION IN THE CHANGING PATTERN OF WORLD TRADE, 1953-66\*

In the years since 1953 Canadian exports have grown one and a half times. Recently the pace has been faster, with an expansion of 60 p.c. in the past four years—as much as in the previous decade. Meanwhile, world trade has more than doubled since 1953 and its composition and direction have changed remarkably. But before looking into the changing character of the world market, it might be well to review the highlights of Canadian trade trends in this period.

### Canadian Exports

Following the post-Korean War decline, Canadian exports climbed sharply during the resource-development boom of 1954-56, but in the following four years sales inched up only slowly, while unused new capacity overhung the resource industries and investment stagnated. Only the exceptional sales of uranium and aircraft avoided absolute declines.

\* Prepared by A. M. Coll, Assistant Director, Economics Branch, Department of Trade and Commerce, Ottawa.

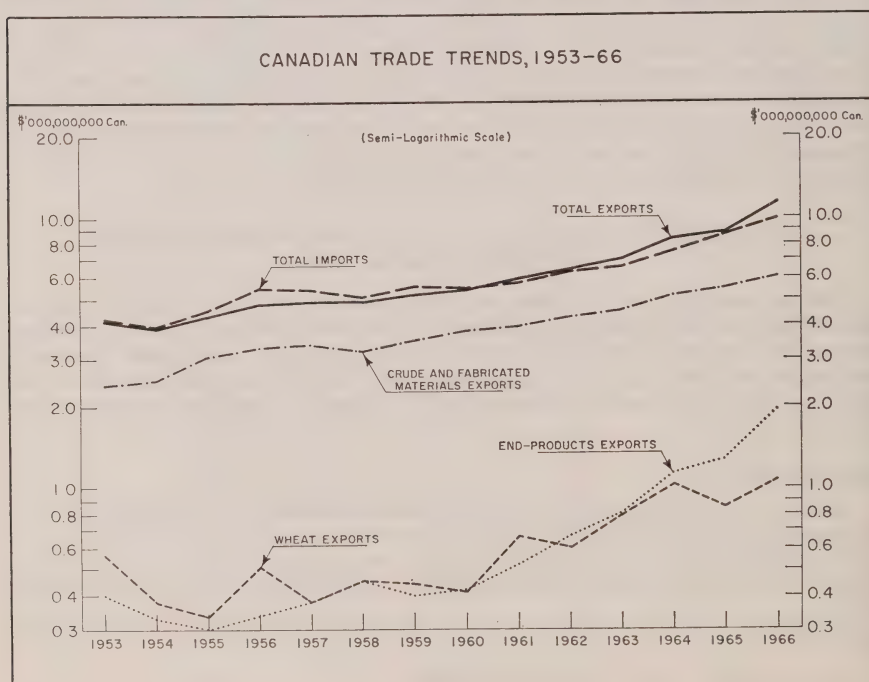


However, in the six years after 1960 exports expanded continually and by the beginning of the centennial year had doubled their annual rate. Twice in that period wheat injected an unexpected boost to foreign sales, alone increasing its value by two and a half times to over \$1 billion. The impact of the major sales to Communist China in 1961 was exceeded only by the effect of the tremendous contracts with Russia in 1963-64. The latter subsided somewhat in the following year but flared up again in 1965-66. Meanwhile, the large contracts with China were renewed on a long-term basis.

Forest and mineral products, the other traditional resource commodities which encompassed about three quarters of exports in 1960, experienced a slower, more gradual pick-up in sales. This strengthened in the mid-1960s, achieving an advance of more than one half by 1966 and bringing in its wake a new, larger and steadier development of resource potential. In this period uranium declined temporarily to small proportions, and oil, natural gas and iron ore gained new impetus. The major metals, in turn, enjoyed strong expansion and potash and sulphur approached the major status held by asbestos. Newsprint and lumber also exhibited new growth and the continuing rise in kraft pulp blossomed into a major development boom centred in the interior of British Columbia.

In the 1960s, however, the pace was set by end-products (non-food). In the previous decade sales, if anything, had fallen back from immediate postwar levels and had declined to only 8 p.c. of all exports but, in 1960-63 alone, end-product sales nearly doubled, with aircraft and related electronic apparatus leading a wide range of items. Recently, under the "Automotive Agreement" exchanges with American counterparts multiplied many times. This along with strong growth in items such as machinery again more than doubled end-product exports, which early in 1967 comprised one quarter of all exports.

The direction of Canadian exports has not changed basically in the past dozen or so years. The United States continues to receive 55 p.c. to 60 p.c. of Canadian shipments. Overseas, however, there has been a slight and gradual diminution of the share to Britain



although other markets have grown in importance. The share sustained by "other Commonwealth and Preferential" countries indicates the continuing value of these relationships. It suggests that Britain's lesser market role is a reflection of slower growth in contrast to burgeoning demand in Continental Europe, Japan and the Communist countries.

### Canadian Imports

In the 1953-66 period, Canadian purchases of foreign goods more than doubled. During the resource-development boom of 1954-57, imports, particularly of machinery and equipment, moved up faster and higher than exports. The deficits on commodity trade, which topped \$713,000,000 in 1956, persisted until 1960 but after that, imports increased at a slightly slower pace than exports, with the notable exception of 1965. Approaching a value of \$10 billion in 1966, Canada presents the sixth largest market in the world, ranking close to Japan. The greater part of this market is for machinery, transportation and electrical equipment, and producers materials such as fuels, metals, chemicals, foodstuffs, textiles and fibres. In addition, a wide range of consumer durables, apparel, foods, and other personal goods are received each year.

Throughout the postwar era, the United States supplied about 70 p.c. of these goods. Increased availability and competition from overseas sources reduced this proportion slightly in the early 1960s but, as a result of the exceptional growth in North America in the past three years and the extra spur of the Automotive Agreement, the American share recovered to 72 p.c. in 1966. Imports from Britain levelled out after the "foreign" car boom at the turn of the decade, but other Commonwealth suppliers benefited from the rise in sugar prices a couple of years ago. The remaining overseas countries retained their postwar high of 17 p.c. of the Canadian market which they reached in 1958. Among them, Western Europe and Japan play a prominent role, as do Venezuela and the Middle East oil-producing countries.

### General Trend of World Trade\*

World trade experienced almost unbroken and unprecedented growth in both value and volume in the past decade or so. It expanded even faster than physical output, illustrating that countries have been moving toward a higher level of economic interpenetration and specialization of production. The value of exports increased from \$83 billion in 1953 to \$186 billion in 1965, a rise of 125 p.c. or 7 p.c. annually. In volume, the increase was similar since over-all prices were little different at the end of the period.

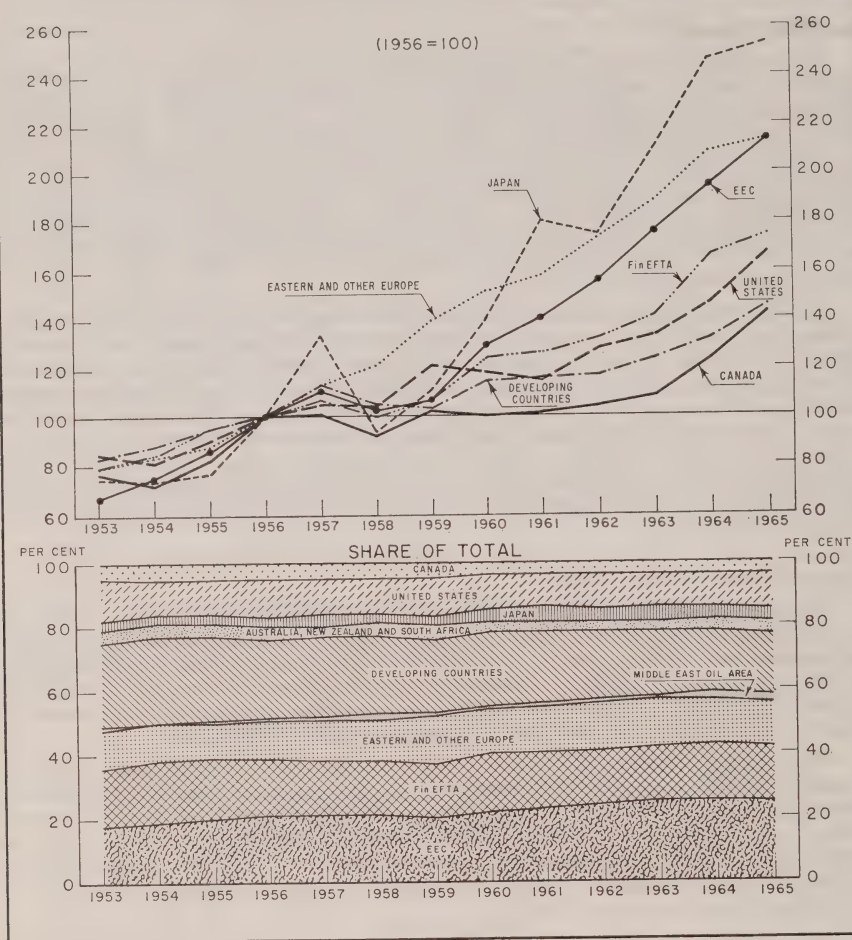
The expansion of trade, of course, was not at a uniform pace over the years nor in equal measure in all countries and for all commodities. International trade fell sharply during the cyclical slump of 1958 but, in response to the subsequent upswing of demand, recovered quickly to new heights. The rapid rate of expansion attained from 1955 to 1957 was reached again in 1960, followed by a moderate deceleration in 1961-62. Then in 1963-64 the growth of world commerce gained new speed to 10 p.c. annually, moderated to 7 p.c. in 1965 and quickened again in 1966.

### Comparative Trends in Market Regions

The expansion of trade in the past dozen years resulted mainly from stronger demand in the industrial countries; in particular, Japanese imports climbed by 11 p.c. a year and the European Economic Community (EEC) raised its purchases 10 p.c. annually. Trade in Eastern Europe also increased at an average of over 8 p.c. although, in view of its modest beginning and until recently its concentration within the Communist bloc, the effect on general world trade was limited. Imports of the developing countries, on the other hand, grew at a much slower rate, averaging about 4 p.c. a year, thus acting as a drag on the general growth of world imports. Nevertheless some of the industrial countries, notably Canada, the United States and Britain, performed at an only slightly faster rate.

\* All values hereafter are in international units (= \$U.S.).

## TRENDS OF WORLD IMPORTS BY MAJOR MARKETS, 1953-65



About half of the increase in world trade since 1953 occurred in Western Europe. The growth was largest and quickest in the EEC, which more than trebled import values, while purchases by North America nearly doubled and those by developing regions grew by three quarters. Consequently, the EEC's share of world imports rose from 18 p.c. to 25 p.c. Germany and Italy recorded the most rapid increases over the whole period, while the growth for France and the Low Countries has been especially strong since 1958-59.

Imports by FinEFTA (the European Free Trade Association and Finland), which more than doubled in value from 1953 through 1965, nearly maintained their share of the world's total, changing only from 17.9 p.c. in 1953 to 17.1 p.c. in 1965. For both the EEC and EFTA a very appreciable increment stemmed from freer intra-group trade, which grew more rapidly than imports from outside countries. In the case of EFTA, however,



imports from within the group were, in 1965, still about one quarter of the total compared with above 40 p.c. in EEC. British imports, however, grew more slowly than the European or EFTA average, gaining barely a sixth from 1955 to 1962, while the upsurge that followed was stopped by the restrictions of October 1964 and later. On the other hand, Scandinavian trade kept up with the European average, showing particularly strong growth in intra-Scandinavian exchanges. Meanwhile, Austria, Switzerland and Portugal together more than tripled purchases and the remaining West European countries as a group kept the average pace.

Eastern Europe's imports rose more quickly than those of Western Europe in earlier years although the initial level in 1953 was relatively small. The prime force at that time was internal trade within the Communist bloc. Although over-all trade growth has since slowed there has been renewed commercial contact with outside countries, in contrast to the intensification of internal exchange occurring in the west of the Continent. Eastern Europe's share of world purchases rose over the whole period from less than 10 p.c. to more than 11 p.c.

The United States remained the largest single import market by nearly doubling purchases in the dozen years after 1953. However, with faster growth elsewhere, their relative importance diminished appreciably from 13 p.c. to 11 p.c. of world imports. Similarly, Canada increased purchases about 85 p.c. but its share of the world market declined from 5.1 p.c. to 4.1 p.c.

Japan, of course, has had a spectacular, more than threefold rise in imports since 1953 and in 1965 provided 4.2 p.c. of the world market, having surpassed Canada in 1962. Moreover, Australia, New Zealand and South Africa were able to achieve healthier economic conditions and more satisfactory rates of growth than most other primary producers, particularly since 1962. Their total imports better than doubled in the 12 years to 1965, restricting the diminution in their share of world imports from 3.8 p.c. to 3.5 p.c.

The Middle East oil-producers, with dramatic growth in export earnings, increased their purchases fourfold from a narrow original position and in 1966 bought 1.2 p.c. of the world's imports. Imports by the other less-developed countries of Africa, Asia and Latin America increased much less than the world average, despite their sharply increased need for imported supplies to speed the pace of economic development. Imports of this large group expanded by three quarters from 1953 to 1965 but, as a share of world imports, fell from 26 p.c. to 20 p.c. Following the boom up to 1957, the rate of expansion of developing countries and their purchases abroad slackened and, as a consequence, imports by these countries have formed a steadily shrinking part of world imports.

Asia and Africa fared slightly better than Latin America in the past decade, even when the oil countries are excluded. Although the share of Asia and Africa in world imports declined to 15 p.c., their growth by half since 1956 compares favourably with the one-fifth addition to imports in Latin America which are now under 5 p.c. of the world market. Decolonization in the former regions brought some political problems but this general stagnation obviously reflects the lack of growth in export earnings and the acute shortage of development funds.

### **Commodity Trade Trends\***

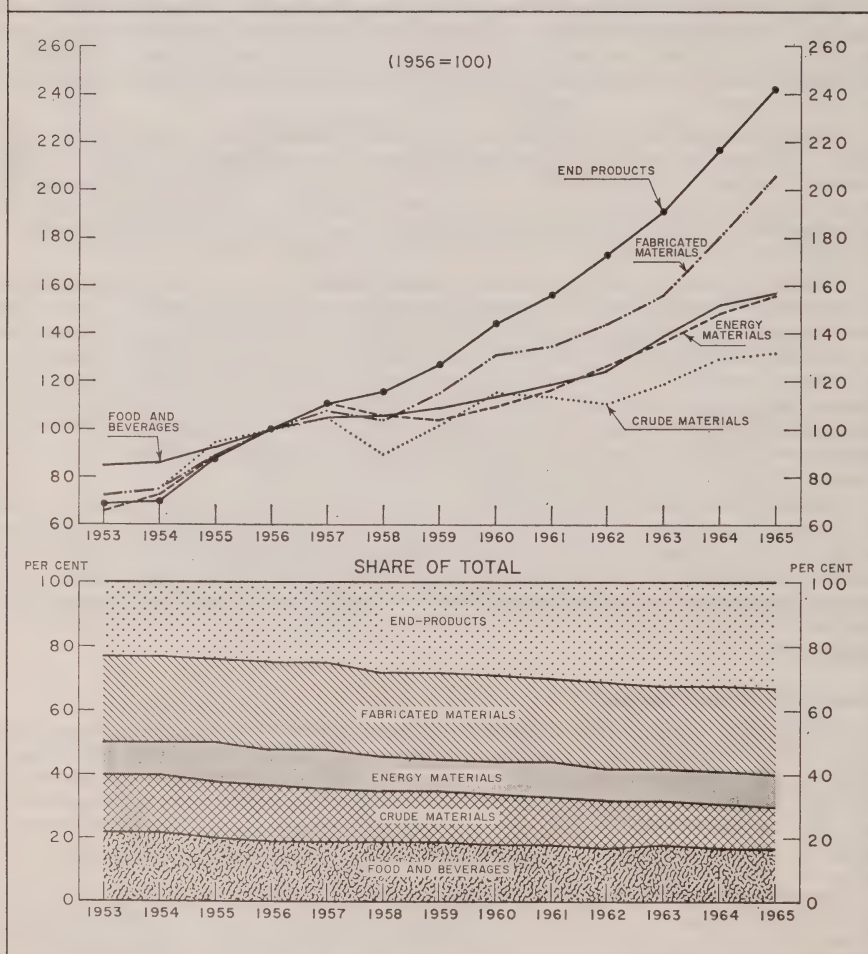
Over the past decade or so, manufactured goods, especially end-products, formed the most dynamic component of international trade. The reduction of tariffs had a much stronger impact on trade in finished goods which were more highly protected than industrial materials. Meanwhile, trade in agricultural products remained shackled by a maze of tariff and other barriers devised to protect local farmers. Moreover, actual world demand for finished goods increased more rapidly than other sectors because of greater elasticity in rela-

\* International trade data are compiled according to the Standard Industrial Trade Classification (SITC) which differs somewhat from the Canadian commodity classification. For example, lumber, pulp and synthetic rubber are considered crude materials in SITC whereas in the Canadian classification they are considered fabricated materials; SITC combines crude and processed "energy materials" into a separate group, whereas in Canadian data they remain with other materials.

tion to incomes. At the same time, final demand for materials was restrained because of technological savings in the use of materials and the demand for higher quality in contrast to quantity. Furthermore, the trend of export prices was much more favourable for manufactured goods than for primary products.

For the whole period the volume of primary trade almost doubled and the volume of manufactures nearly tripled. The difference was accentuated by net price changes. While manufactures accumulated a one-tenth price gain, primary prices dropped one tenth between 1957 and 1962 but later recovered half the loss. As a result of these different rates of growth, the composition of international trade experienced quite substantial changes. In 1953 primary products constituted just over half and as late as 1958 about 46 p.c. of the total, but by 1965 their share was down below 40 p.c.

TRENDS OF WORLD TRADE BY COMMODITY GROUPS, 1953-65



The proportional decline of primary products in international trade was essentially the outcome of slow growth in food and agricultural materials, in which tropical products suffered a particularly sharp curtailment. Food and beverages, which made up 22 p.c. of all trade in 1953, were under 17 p.c. of the total in 1966. But some "higher income" items such as meat, fish, fruit and alcoholic beverages fared much better than "basic" items such as sugar, coffee, butter and tobacco. Cereals escaped a similar fate through the unforeseen and continuing shortfalls in the grain output of Communist countries.

A similar division existed among inedible crude materials, which also declined from about 18 p.c. of international exchanges in the period 1953-57 to about 13 p.c. in 1965. Oilseeds, hides and rubber showed limited increases while textile fibres, once a dominant sector, were especially sluggish. On the other hand, forest and mineral products held their own in the world market, primarily reflecting rapid growth in industrial activity in the advanced countries. The energy sector, which nearly maintained a one-tenth share of world trade, also saw a notable divergence between the slow demand for coal and the rapidly rising requirements for petroleum and its products.

In contrast, the share of manufactures in world trade rose continuously over the past dozen years. Already representing nearly half of world trade in 1953, the share advanced to over 60 p.c. by 1965. In recent years, three quarters of manufactured imports were absorbed by the industrial countries of North America, Western Europe and the Soviet area. A closer look at manufactures shows that some groups have expanded more rapidly than others, so that the internal composition has changed significantly in this period.

#### Commodity Shares of Manufactured Exports from Industrial Countries, 1954 and 1964

(Percentages of total)

Commodity	1954	1964
	p.c.	p.c.
<b>Fabricated Materials (inedible)</b> .....	<b>41.5</b>	<b>36.0</b>
Chemicals.....	11.8	12.3
Textiles.....	12.2	7.7
Metals.....	17.5	16.0
<b>End-Products (inedible)</b> .....	<b>58.5</b>	<b>64.0</b>
Machinery and transportation equipment.....	39.4	44.3
Other end-products.....	19.1	19.7
<b>All Manufactures</b> .....	<b>100.0</b>	<b>100.0</b>

The expansion in the shipments of machinery and transportation equipment stands out as the most dynamic element. In fact, its share of all exports rose from just over one sixth to nearly one quarter during the period. Exports of other (largely consumer) end-products and of chemicals were additional strong components. Since the metal group almost kept the average pace of manufactures, it was textiles that dropped sharply relative to the total; along with other "basic necessities" such as food, demand elasticities for textiles in relation to rising incomes could not match those of other products.

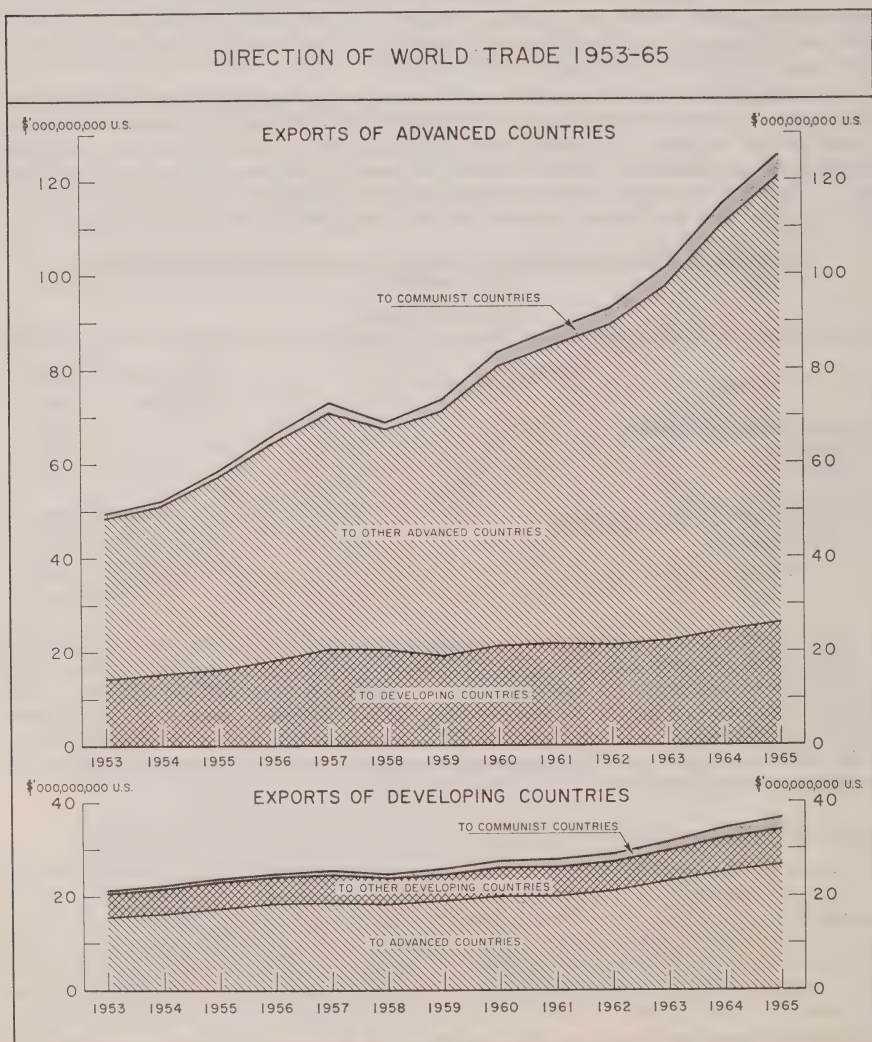
#### Trade Growth Comparisons

Trade among the industrial countries of relatively finished manufactured goods flourished in the past decade. Exports from Continental European countries advanced by 10 p.c. annually and Japan is now the source of seven times the value of goods shipped in 1953. Sales to industrial countries increased much faster than to developing areas. Often, countries with rapid growth, such as Italy and Japan, expanded their supply to the world faster than their intake and the same was true of France and other Common Market countries from 1956 to 1960. Growth was particularly rapid in regional trade—within the EEC, within Scandinavia, and between Japan and its Far East neighbours. On the other



hand, in the United States and Britain, where there was moderate growth in trade in the past decade, imports rose slightly quicker than shipments to others. For Canada growth was also moderate but, if recent years are averaged, it was balanced between imports and exports. For Scandinavia and other EFTA countries, exports also kept pace with imports but in other Western European countries merchandise imports spurted ahead, reflecting primarily the impact of new tourist expenditures in Spain and Greece.

Although demand for crude materials showed a limited increase, Russia and Eastern Europe grew rapidly as a source, as the Iron Curtain slowly lowered. But tight restrictions on capital, service and other financial movements required a close balancing with bloc imports, with the exception of occasional gold sales. Notably, shipments to developing regions rose faster than imports while the reverse was true of advanced countries.



**Regional Trade Pattern Trends, 1955-64**

(Average annual percentage increases in value)

From—	To—	Canada	United States	EFTA	EEC	Japan	Soviet Bloc, China	Developing Countries	All Countries
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Canada.....		—	5.3	4.4	9.3	16.8	103.6	7.9	6.5
United States.....		5.0	—	7.6	10.6	15.7	106.2	6.1	6.5
EFTA.....		4.6	8.4	8.6 <sup>1</sup>	9.2	27.0	11.5	2.7	6.5
EEC.....		11.9	11.2	8.7	12.5 <sup>1</sup>	19.8	14.8	3.7	9.5
Japan.....		17.6	17.9	19.5	16.6	—	39.9	11.4	14.5
Soviet Bloc, China.....		15.5	7.5	7.2	12.9	22.9	7.5 <sup>1</sup>	18.2	9.0
Developing countries.....		7.8	1.4	2.9	5.6	12.4	14.7	2.4 <sup>1</sup>	4.3
<b>All Countries.....</b>		<b>5.7</b>	<b>5.5</b>	<b>6.5</b>	<b>9.7</b>	<b>14.7</b>	<b>9.5</b>	<b>5.0</b>	<b>7.1</b>

<sup>1</sup> Includes exports from one country to another within group.

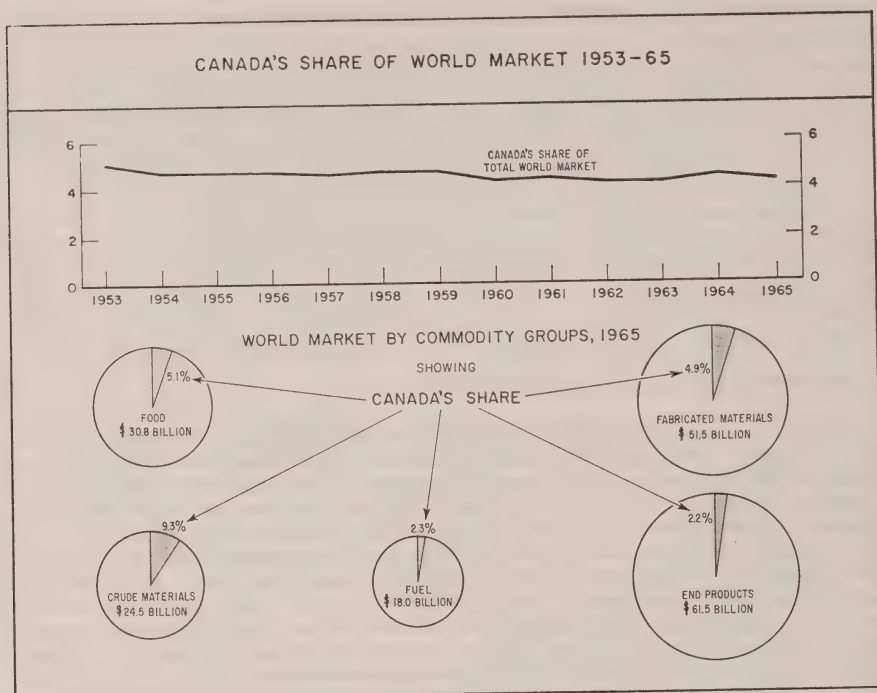
Meanwhile, the Middle East oil-producing countries quadrupled their exports as well as their imports. Since purchases were less than one third of sales in 1953, their trade surplus by 1964 climbed to \$5.3 billion on imports of \$2.3 billion; they supplied 4.2 p.c. of world trade but received 1.2 p.c. in return. On the other hand, except for the pick-up in 1963-64, exports of Australia, New Zealand and South Africa—mostly of wool and other farm products—grew very slowly; this tended to limit import growth, except in 1960 and in the recent development boom. The less-developed countries of Asia, Africa and Latin America had similar experiences of very slow growth in sales—under 60 p.c. for the whole period. This sluggishness was concentrated in tropical foods and agricultural materials and was reflected in declining prices and accentuated by the unstable political and social milieu. The effect was multiplied in that these countries increased sales less to each other, even though neighbours, than to the advanced countries—the opposite of Western European experience.

In summary, the developing countries increased supply to the world even less than their small increase in demand. Most of the trade growth was among the advanced countries, with the fastest growing economies (including those recovering from World War II damage) showing even stronger gains as suppliers than as recipients.

**Canada's Share in World Commodity Markets**

Canadian exports have moved from year to year in accordance with the general trend of world trade, although from 1959 to 1963 the one-fifth rise in Canadian exports was appreciably slower than the one-third increase in world exports. In 1964 and again in 1966 Canadian exports increased somewhat faster than the world total, which was in part the effect of exceptional demand in Russia and China for Canadian wheat. The relatively moderate expansion of Canadian exports at the beginning of the decade may be attributed in part to the existing high level of postwar sales in contrast to the war-damaged economies as well as to the concentration of direction and to the commodity composition.

Canadian exports are adjusting rapidly to changes in demand although they still exhibit substantial variations from the unfolding pattern of world imports. In 1965 inedible end-products accounted for one sixth of Canadian exports compared with 9 p.c. in 1960; in 1966 this share rose sharply to reach one quarter of all exports as 1967 began. This is a remarkable share increase, particularly in view of the rising total of Canadian exports. If one considers, moreover, that the share of products in world trade increased from about 29 p.c. to 33 p.c. in this period, it becomes evident that the make-up of Canadian exports is shifting heavily to the commodity groups that have shown most growth in the past dozen years. This picture is amplified somewhat by a glimpse at the trends in major sectors within the commodity groups.



Agricultural products and crude materials are still important in Canadian exports, forming nearly half of all shipments in 1965. Generally these primary products form only 30 p.c. of world imports, having declined continually from earlier pre-eminence. But if over-all trade in food has moved slowly, this cannot be said of meat, fish and alcoholic beverages nor of cereals. All of these loom large in foreign purchases from Canada in contrast to slow-moving items such as sugar and tropical beverages. Moreover, if there is a genuine freeing of trade in food, Canada might fare even better.

Canada's specialization in mineral and forest products as distinct from textile fibres, oilseeds, rubber and similar tropical or pastoral products again modifies the impact of sluggish markets for crude materials. The former are in fairly strong demand, being oriented to the buoyant industrial markets for durables, construction and packaging. Within the less buoyant group, it is apparent that man-made fibres and rubber have accentuated the stagnation of natural products and this also has favoured Canada to a certain degree. In the energy sector, the further discovery of oil and gas in Western Canada and the wider use of these materials throughout North America have improved Canada's fuel position quite notably.

Conversely, in the further-manufactured groups, Canada's exports have been conditioned until recently not only by specialization in a few resource-related sectors but also by the general organization of end-products and semi-fabrication industries inside the protected domestic market.

On the one hand, Canada is famous for newsprint and non-ferrous metals and world demand for these commodities has increased at a moderate pace. But world trade in semi-fabricated metals, paperboard, fine papers and chemicals has grown faster. Even more so have exchanges in machinery and equipment, where Canada's participation until recently



was limited largely to farm machinery and certain electrical items. The improved performance in the past few years is in part attributed to special defence and aid programs but also to a wider realization of the possibilities in rationalizing secondary industries in relation to the international market. This has been particularly evident in the upsurge in exchanges of automobiles and components.

### Canada's Participation in Major Foreign Markets

There is a wide appreciation of the particular part played by the United States and also by Britain and other countries in Canada's inflow and outflow of merchandise. However, less attention has been given to the role of Canada in the trade patterns of foreign countries.

It is not surprising that the Canadian impact is highest in the imports of the United States, its immediate neighbour. Canada's share of American purchases has been just under 23 p.c. in recent years, about the same as in the mid-1950s and nearly triple the 8-p.c. portion of the British market, usually the next highest Canadian impact. In both, a decline in share in the late 1950s was arrested—in 1957 in Britain and since stabilized; in 1960 in the United States followed by recovery. Canada is by far the largest single supplier to the United States, equalling the whole of Latin America and nearly rivalling all of Western Europe. In Britain, Canada is one of several main suppliers—trailing the United States but larger than any other single country. Yet EEC as a group is twice as large and Scandinavia and the other "Old Dominions" are larger. In both markets Continental Europe is increasing its share while developing nations are falling off the pace; meanwhile, Canada has maintained its share.

Over much of the period the 4-p.c. to 5-p.c. share of Japanese imports ranked third in the scale of impact—until Chinese wheat purchases changed the picture. Canadian sales did not keep up with general Japanese imports in the mid-1950s but by 1960 much of the ground had been regained and the position slowly improved up to 1964. Some of the decline in 1965 has since been recovered.

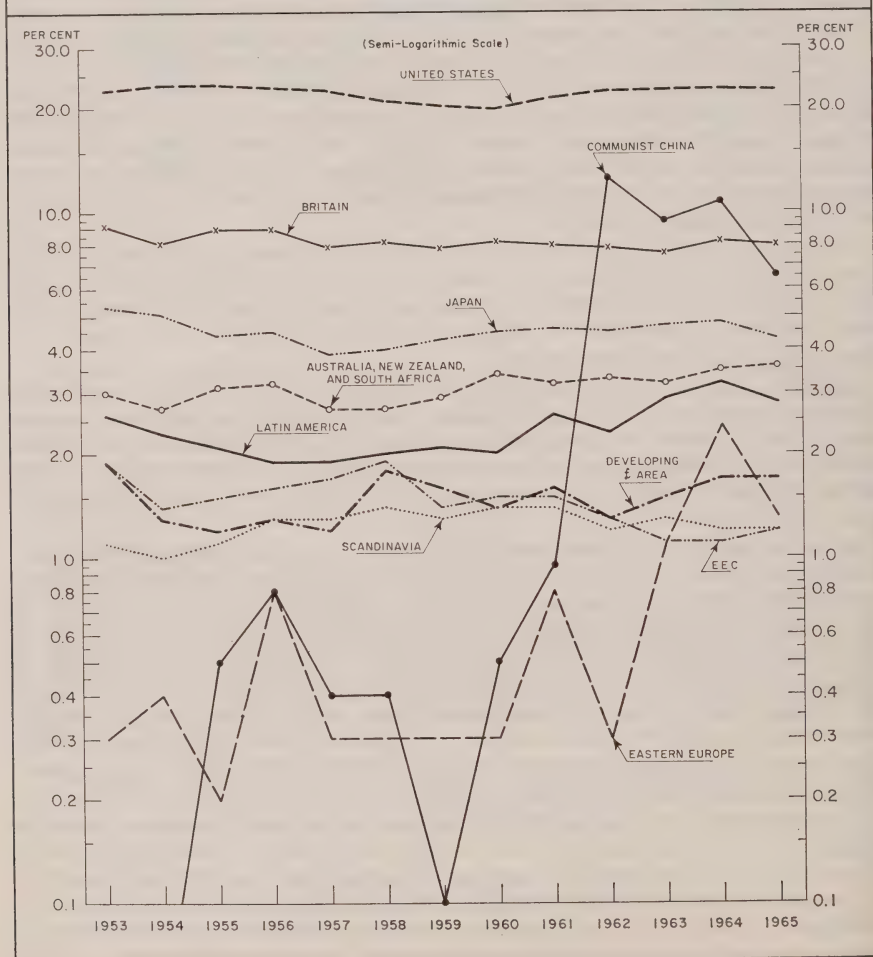
Australia, New Zealand and South Africa collectively rank next, with Canadian participation in imports reaching 3.6 p.c. These fellow "Dominions" in the "old" Commonwealth of the 1930s were traditional but never large proportional buyers from Canada, because of the parallel histories of industrial development. Sales fluctuated markedly, reflecting financial and industrial adjustments, but Canada's share in the period was not higher than in 1965.

It is perhaps surprising that Canada's impact in Latin American imports [excluding sterling (£) territories], at about 3 p.c. of total, is so close to that in the "Old Dominions" and nearly double the share obtained in developing £ countries. After a decline in the mid-1950s, Canadian participation in Latin America gained, particularly in recent years. Meanwhile, in the developing £ area, imports from Canada were under 2 p.c. of the total in this period and would probably have been much less without aid through the Colombo Plan and other Commonwealth channels. Nevertheless, there are wide variations in Canada's penetration throughout the Commonwealth. In particular, trade with the nearby West Indies has traditionally been important, although in recent years Canada's share has eased down below one tenth of their imports.

Continental Western Europe, however, is even farther down the scale of Canadian participation. Canadian exports to these markets are, of course, sizable and increasing but in relation to total volume they appear small—a little over 1 p.c. of Scandinavian imports and in the Common Market declining from about 2 p.c. to just over 1 p.c. The relaxation of barriers against end-products and the tremendous rise of intra-European exchanges has tended to overshadow imports of grain and industrial materials from Canada.

The dramatic rise of Canadian wheat purchases by Communist countries has radically altered the Canadian position in these markets. Current Chinese trade data are hard to obtain but it appears that Canada recently held up to one tenth of the restricted import market of this large but autarchic economy. The impact on Eastern Europe has been less striking because of their considerable exchanges within the region and their widening commercial contacts throughout the world. Nevertheless, in 1964 Canada supplied 2.4 p.c. of all Eastern Europe's imports, a many-fold rise from earlier shares. Moreover, considering Russia (U.S.S.R.) alone, the Canadian share has been even higher—surpassing 4 p.c. in 1964. This fell along with wheat sales in 1965 but climbed again in 1966.

CANADA'S SHARE OF SELECTED MARKETS, 1953-65



It will be noted that Canada does not have the preponderance in the supply of any country (or in their sales) that the United States and even Britain have as markets for and suppliers to Canada. This structural contrast makes Canada far more sensitive to their developing situations than they are to Canadian activities.

Furthermore, although Canada has held its own share in most markets of the world, the higher penetration of the American and British markets (which take nearly three quarters of Canadian exports) at a time when these economies were expanding less rapidly than Continental Europe and Japan tended to dampen Canada's over-all performance in the world market. By the same token, stronger growth trends in the United States in the past few years have created many of the opportunities for the recent rising trend in Canadian exports.

## Summary Statistics of World Markets, 1953-65

Regional Market and Commodity Group	Value of Imports (\$'000,000,000 U.S.)				Percentage Change			Percentage Share of World Total	
	1953	1956	1960	1965	1953-56	1956-60	1960-65	1953	1965
Regional Market									
Canada.....	4.3	5.6	5.7	8.0	31	—	42	5.1	4.1
United States.....	10.9	12.8	15.1	21.4	17	18	42	12.9	10.9
EEC.....	15.5	23.0	29.6	49.0	48	29	65	18.4	25.1
France.....	4.2	5.9	6.3	10.3	40	7	65	5.0	5.3
Germany.....	4.1	7.0	10.1	17.5	70	45	73	4.9	8.9
Benelux.....	4.8	7.0	8.5	13.8	46	21	63	5.7	7.1
Italy.....	2.4	3.2	4.7	7.4	31	49	56	2.9	3.8
FinEFTA.....	15.1	19.2	23.8	33.4	27	24	41	17.9	17.1
Britain.....	9.0	10.4	12.3	15.7	15	18	27	10.7	8.0
Scandinavia.....	4.0	5.6	7.2	11.1	40	29	53	4.8	5.7
Other Western Europe.....	2.0	2.2	2.6	5.9	12	17	127	2.4	3.0
Eastern Europe.....	8.2	10.7	16.8	21.6	30	53	28	9.7	11.1
Russia.....	..	3.6	5.6	8.1	..	56	43	..	4.1
Middle East Oil Area.....	0.6	1.0	1.7	2.3	80	62	38	0.7	1.2
Japan.....	2.4	3.2	4.5	8.2	34	39	82	2.9	4.2
Australia, New Zealand and South Africa...	3.2	4.1	5.0	6.9	27	24	36	3.8	3.5
Developing £ Area.....	6.5	8.4	10.4	13.2	29	24	27	7.8	6.8
Other Asia, Africa.....	9.0	10.4	11.5	15.9	15	11	37	10.7	8.1
Latin America.....	6.5	7.9	8.4	9.7	22	5	16	7.7	4.9
All Imports..... (c.i.f. f.o.b.)	84.3 74.5	108.6 102.8	135.0 127.4	195.3 186.3	29 38	24 24	45 46	100.0	100.0
Commodity Group									
Food and beverages.....	16.6	19.6	22.3	30.8	18	14	38	22.3	16.5
Materials.....	40.4	57.8	68.4	94.0	43	19	37	54.2	50.5
Crude materials.....	13.3	18.5	21.3	24.5	39	15	15	17.9	13.2
Energy materials.....	7.6	11.5	12.7	18.0	52	10	42	10.2	9.7
Fabricated materials.....	19.5	27.7	34.5	51.5	42	24	49	26.2	27.6
End-products.....	17.5	25.4	36.7	61.5	45	44	68	23.5	33.0



## Summary Statistics of World Exports, 1953-65

Major Sources	Value of Exports (\$'000,000,000 U.S.)				Percentage Change			Percentage Share of World Total	
	1953	1956	1960	1965	1953-56	1956-60	1960-65	1953	1965
Canada.....	4.2	4.9	5.6	8.1	16	13	45	5.1	4.3
United States.....	15.7	19.0	20.4	27.1	21	8	33	19.0	14.5
EEC.....	14.7	20.7	29.7	47.9	41	44	61	17.8	25.7
France.....	4.0	4.8	6.9	10.1	18	44	47	4.9	5.4
Germany.....	4.7	7.8	11.4	17.9	64	47	57	5.7	9.6
Benelux.....	4.4	6.0	7.8	12.8	37	30	64	5.3	6.9
Italy.....	1.5	2.1	3.6	7.2	42	70	97	1.8	3.9
FinEFTA.....	12.6	16.0	19.2	27.5	27	20	43	15.2	14.8
Britain.....	7.2	8.8	10.0	13.2	23	13	13	8.7	7.1
Scandinavia.....	3.5	4.6	5.9	9.2	33	29	55	4.2	4.9
Other Western Europe.....	1.4	1.3	1.7	2.5	-5	34	44	1.7	1.3
Eastern Europe.....	8.1	10.5	15.6	21.1	29	49	35	9.8	11.3
Russia.....	..	3.6	5.6	8.2	..	54	47	..	4.4
Middle East Oil Area.....	1.9	3.2	4.6	7.8	66	43	68	2.4	4.2
Japan.....	1.3	2.5	4.1	8.5	96	62	109	1.5	4.5
Australia, New Zealand and South Africa...	3.4	3.7	3.9	5.4	10	6	38	4.1	2.9
Developing £ Area.....	6.2	7.0	7.6	9.6	14	8	26	7.5	5.2
Other Asia, Africa.....	5.7	6.4	6.7	9.8	13	6	46	6.8	5.3
Latin America.....	7.6	8.6	8.6	11.2	13	-1	30	9.2	6.0
<b>World Supply.....</b>	<b>82.6</b>	<b>103.8</b>	<b>127.7</b>	<b>186.3</b>	<b>26</b>	<b>23</b>	<b>46</b>	<b>100.0</b>	<b>100.0</b>

## Summary Statistics of Canada's Exports, 1953-65

Country or Area	Value of Exports (\$'000,000 U.S.)				Percentage Change			Percentage Share of Each Market	
	1953	1956	1960	1965	1953-56	1956-60	1960-65	1953	1965
United States.....	2,461	2,912	3,141	4,670	18	8	48	22.6	22.6
EEC.....	265	354	456	588	34	29	28	1.9	1.2
Britain.....	675	832	953	1,096	23	14	15	9.1	8.0
Scandinavia.....	50	72	105	117	44	46	12	1.1	1.2
Eastern Europe.....	10	64	40	290	540	-37	616	0.3	1.3
Communist China.....	—	3	9	87	—	268	981	—	6.5
Japan.....	121	130	184	293	7	42	59	5.3	4.3
Australia, New Zealand and South Africa.....	99	133	182	239	34	37	31	3.0	3.6
Developing £ Area.....	139	116	160	223	-17	38	40	1.9	1.7
Latin America.....	201	180	179	298	-10	-1	66	2.6	3.1
<b>World Market.....</b>	<b>4,184</b>	<b>4,947</b>	<b>5,562</b>	<b>8,107</b>	<b>18</b>	<b>13</b>	<b>46</b>	<b>5.1</b>	<b>4.3</b>

## PART I.—FOREIGN TRADE STATISTICS\*

## Section 1.—Explanatory Notes on Canadian Trade Statistics

**Sources.**—Canadian foreign trade statistics are compiled from information recorded on customs documents received by the Dominion Bureau of Statistics from the various customs ports in Canada with the following exceptions: *electricity* exports are based on reports received from the National Energy Board and imports are based on reports received from public utility companies; and *crude petroleum exported by pipeline*, statistics for which are reported directly to the Bureau by the pipeline companies. Record is kept of value and, whenever possible, of quantity. In considering trade figures, it should be noted that the statistics do not necessarily reflect the financial transactions relating to the movement of goods since the method and time of payment are affected by many factors.

**Coverage.**—*Domestic exports* or *exports of Canadian produce* include exports of goods wholly produced in Canada together with exports of previously imported goods that have been changed in form by further processing in Canada. *Re-exports* or *exports of foreign produce* include previously imported goods that are exported from Canada in the same form as when imported. From January 1964, re-exports have also included exports from customs warehouses.

*Imports*, as from Jan. 1, 1964, include all goods cleared by customs immediately on arrival in Canada, plus goods entered into customs warehouses rather than cleared on arrival. For 1963 and earlier years, imports included goods cleared immediately on arrival plus goods cleared for consumption out of customs warehouses. The two types of record eventually cover the same totals, except for a small amount of goods entered into customs warehouses and then re-exported, but there may be an important difference in the time at which warehoused goods are recorded as imports; some shipments entering customs warehouses remain there for several months before clearance.

The most important exclusions from export totals are: current coin, gold, goods shipped to Canadian Armed Forces or diplomats stationed abroad, goods financed under the Defence Appropriation Act and shipped to other NATO countries, temporary exports for exhibition or competition, fuel and stores sold to foreign vessels and aircraft in Canada, settlers' effects, private donations and gifts, and identifiable tourist purchases—generally, all temporary exports and goods merely moving in transit through Canadian territory.

The most important exclusions from import totals are: current coin, gold, goods for use of the United States Armed Forces stationed at treaty bases in Canada, Canadian-owned military equipment returned to Canada, ships imported for use in foreign trade and ships of British construction and registry imported for use in the coasting trade, temporary imports for exhibition or competition, fuel and stores purchased by Canadian vessels and aircraft abroad, settlers' private donations and gifts, tourist purchases exempt from duty, and goods imported for foreign armed forces or diplomats stationed in Canada—generally, all temporary imports and goods merely moving in transit through Canadian territory.

Beginning Jan. 1, 1964, Canada's trade statistics are compiled on a "General Trade" basis instead of on the "Special Trade" basis used previously. The main difference for figures recorded on the General Trade basis is that imports are entered as such whether the goods are cleared through customs for immediate domestic use or stored in a customs warehouse. Domestic exports remain the same on both bases but re-exports, after Jan. 1, 1964, include exports from customs warehouses which were previously excluded. Over a period of years, the totals of Canadian exports or imports would be almost the same on either basis but considerable differences might appear in individual years because of time of clearance and extent of business activity.

\* Based on statistical reports published by the External Trade Division, Dominion Bureau of Statistics.

From Jan. 1, 1960, a new category was established in both export and import statistics entitled "Special Transactions—Non-trade". This category includes certain commodity movements which either have no international financial implications or, for various reasons, are better considered separately from merchandise trade in economic analysis. The value of transactions of these types is now excluded entirely from published totals of Canadian merchandise trade and does not appear in this volume, but statistics for the classes of this category are contained in the regular monthly export and import reports.

Beginning with statistics for January 1961, a new export commodity classification was used, based on the Standard Commodity Classification developed by the DBS as a tool for integrating statistical series derived from different sources. Whereas the classification previously used classified commodities primarily according to the material of which they were chiefly composed, the new classification places commodities in sections mainly according to stage of processing and purpose, as follows: Live Animals; Food, Feed, Beverages and Tobacco; Crude Materials, Inedible; Fabricated Materials, Inedible; End Products, Inedible; and Special Transactions—Trade.

As from Jan. 1, 1964, a new commodity classification was also introduced for import statistics, based on similar concepts to those embodied in the export classification, so that there is now a closer approach to comparability between the two sets of statistics. As part of the change to the new classifications, the commodity detail shown in trade returns has been modernized by eliminating statistics on some commodities of minor significance and instituting new classes for many commodities of greater importance. The grouping system employed in the new classification also makes easier the identification of other commodities which may merit separate specification. For most of the commodities of greatest importance in Canadian exports, the classes of the new export commodity classification are substantially identical with those of its predecessor. The import classification is more extensive than the export classification and in its new form gives an up-to-date and comprehensive coverage of those commodities which constitute the bulk of Canada's import trade.

**Valuation.**—Export entries define the value of exports as the "actual amount received or to be received in terms of Canadian dollars, exclusive of all charges" (freight, insurance, handling, etc.). This definition would give values f.o.b. point of consignment for export but in practice it is not always followed. For example, in recent years a significant but indeterminate proportion of exports has been reported in United States dollars, resulting in some overstatement of the value of exports for the period prior to June 1961 and some understatement of their value in subsequent years.

The value of goods imported is usually the value as determined for customs duty. The Canadian Customs Act generally requires the valuation of goods f.o.b. point of shipment in the country of export but, at least in recent years, importers have often reported c.i.f. value for free goods or goods subject to specific rates of duty. An effort is made to ensure that f.o.b. values are consistently used in import statistics in the following cases: goods subject to dumping duty (from January 1959); raw cotton and crude petroleum (from January 1962, retroactive to January 1960); raw sugar (from January 1963, retroactive to January 1961); and all shipments individually valued at \$100,000 or more (from January 1964). Only about one fifth of the value of imports is covered by these specific checks.

**Country Classification.**—Trade is credited to countries on the basis of consignment. For exports from Canada, the country of consignment is that country to which goods are, at the time of export, intended to pass without interruption of transit except in the course of transfer from one means of conveyance to another. For imports into Canada, the country of consignment is the country from which the goods came without interruption of transit except in the course of transfer from one means of conveyance to another. This is not necessarily the country of actual origin, since goods produced in one country may be imported by a firm in another country and re-sold to Canada; in such cases the second country is the country of consignment to which the goods are credited. There is one



exception to this rule; an attempt is made to classify by country of origin goods produced in South America, Central America, Bermuda and the Antilles and consigned to Canada from the United States. The effect of this procedure is to reduce slightly the imports credited to the United States and to increase those credited to South and Central American countries.

The country sub-totals include trade with Commonwealth and other countries entitled to Preferential rates of duty (the Republic of Ireland and the Republic of South Africa).

**Discrepancies in Trade Statistics Between Canada and Other Countries.**—Canada's statistics of exports are rarely in exact agreement with the import statistics of its customers and parallel differences occur with Canadian imports. Major factors contributing to these discrepancies include:—

- (1) Differences in the system of valuation used by Canada and those of other countries, especially with respect to the treatment of transportation charges.
- (2) Differences in the statistical treatment of special categories of trade, such as armaments and military supplies, government-financed gift or mutual aid shipments, postal and express shipments, or warehouse trade.
- (3) Differing definitions of territorial areas.
- (4) Differing systems of crediting trade by countries, notably the consignment system used by Canada and the actual origin or ultimate destination system in use by some other countries.
- (5) Differences in the time at which trade is recorded in the statistics of partner countries caused by the time required for goods to move from one country to another.

## Section 2.—Total Foreign Trade

In considering the figures in Sections 2 to 5, reference should be made to the explanatory notes on trade in Section 1. Exports and imports of gold are excluded from all tables.

### 1.—Value of Total Foreign Trade of Canada (excluding Gold), 1951-65

NOTE.—Figures have been revised to cover the adjustment for "Special Transactions—Non-trade"; see p. 968.

Year	Exports			Imports			Balance of Trade: Excess of Exports (+) Imports (—)
	Domestic	Re-exports	Total	Dutiable	Free	Total	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1951.....	3,897,082	48,847	3,945,929	2,174,304	1,830,635	4,004,939	— 59,011
1952.....	4,282,361	54,814	4,337,175	2,162,882	1,753,535	3,916,418	+ 420,757
1953.....	4,097,111	55,158	4,152,269	2,417,960	1,829,848	4,247,808	— 95,539
1954.....	3,860,217	65,604	3,925,821	2,311,568	1,655,833	3,967,401	— 41,580
1955.....	4,258,328	69,448	4,327,776	2,638,037	1,929,718	4,567,754	— 239,978
1956.....	4,760,442	73,335	4,833,777	3,292,516	2,254,435	5,546,951	— 713,175
1957.....	4,788,880	95,261	4,884,141	3,223,197	2,250,149	5,473,346	— 589,205
1958.....	4,791,436	102,907	4,894,343	2,952,707	2,097,785	5,050,492	— 156,150
1959.....	5,021,672	118,628	5,140,300	3,143,065	2,365,856	5,508,921	— 368,621
1960.....	5,255,575	131,217	5,386,792	3,048,583	2,434,112	5,482,695	— 95,903
1961.....	5,754,986	140,229	5,895,215	3,115,408	2,653,170	5,768,578	+ 126,637
1962.....	6,178,523	169,190	6,347,713	3,480,282	2,777,494	6,257,776	+ 89,937
1963.....	6,798,529	181,613	6,980,142	3,542,585	3,015,623	6,558,209	+ 421,933
1964.....	8,094,219	209,186	8,303,405	4,034,903	3,452,804	7,487,707	+ 815,698
1965.....	8,525,078	241,599	8,766,677	4,366,096	4,267,334	8,633,430	+ 133,247

**Treatment of Gold in Trade Statistics.**—The general use of gold as a money metal gives it peculiar attributes that distinguish it from other commodities in trade. In particular, international movements of gold are determined largely by monetary factors rather than by ordinary trade or commercial considerations. Gold is generally acceptable; it does not have to surmount tariff barriers and is normally assured a market at a fixed

minimum price. Also, gold may be bought or sold internationally without any physical movements of the metal, such transactions being recognized by simply setting aside or 'ear-marking' the metal in the vaults of some central bank.

For these reasons, movements of gold in a primary or semi-fabricated state are excluded from the totals of Canada's commodity trade. However, since gold is produced in Canada primarily as an export commodity, a series showing new gold production available for export is published as a supplement to the trade statistics. Because this series is calculated on a production basis, a division of the figures into transactions with individual countries is not possible.

## 2.—New Gold Production Available for Export, by Month, 1958-65

(Millions of dollars)

Month	1958	1959	1960	1961	1962	1963	1964	1965
January.....	14.7	11.7	14.5	14.1	8.4	13.1	12.8	14.8
February.....	17.7	16.1	15.0	14.2	18.1	13.1	10.9	7.7
March.....	11.1	9.8	14.3	12.8	14.5	14.8	9.6	12.2
April.....	10.7	14.1	9.4	13.3	9.2	11.5	15.4	8.5
May.....	12.9	12.9	12.4	15.2	17.6	12.4	10.6	13.9
June.....	14.7	13.8	13.3	13.9	12.8	13.9	14.7	11.9
July.....	13.6	11.4	11.7	12.7	10.5	12.3	8.9	10.4
August.....	11.4	11.1	14.4	14.8	16.2	11.5	14.0	12.1
September.....	12.6	10.3	15.7	13.1	11.6	12.3	12.6	11.9
October.....	13.9	9.4	12.3	11.1	12.6	15.0	10.5	9.8
November.....	11.4	12.6	11.7	16.3	14.1	12.6	10.5	12.0
December.....	12.4	15.1	16.8	10.7	9.6	11.4	14.3	12.5
<b>Totals.....</b>	<b>157.1</b>	<b>148.3</b>	<b>161.5</b>	<b>162.2</b>	<b>155.2</b>	<b>153.7</b>	<b>144.8</b>	<b>137.7</b>

## Section 3.—Trade by Geographic Area

The tables in this Section provide information about Canada's total foreign trade by geographic region and by country.

### 3.—Trade of Canada with Commonwealth and Preferential Countries, and Other Countries, 1946-65

Item and Year	Britain		Other Commonwealth and Preferential Countries		United States <sup>1</sup>		Other Countries	
	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total
<b>Domestic Exports</b>	<b>\$'000</b>		<b>\$'000</b>		<b>\$'000</b>		<b>\$'000</b>	
1946.....	594,138	26.1	301,411	13.3	884,066	38.9	492,390	21.7
1947.....	746,718	27.1	405,485	14.8	1,030,101	37.4	570,495	20.7
1948.....	653,249	22.4	337,880	11.1	1,498,552	49.1	532,409	17.4
1949.....	702,074	23.6	309,214	10.4	1,504,768	50.6	458,913	15.4
1950.....	467,896	15.1	197,654	6.4	2,020,703	65.1	417,763	13.4
1951.....	630,124	16.2	260,889	6.7	2,296,235	58.9	709,834	18.2
1952.....	744,461	17.4	283,809	6.6	2,302,673	53.8	951,418	22.2
1953.....	662,785	16.2	244,745	6.0	2,433,318	58.9	776,263	18.9
1954.....	651,033	16.9	202,561	5.2	2,308,670	59.8	697,953	18.1
1955.....	767,642	18.0	248,624	5.9	2,846,646	59.8	694,426	16.3
1956.....	811,113	17.0	252,117	5.3	2,803,085	58.9	894,127	18.8
1957.....	720,898	15.1	240,016	5.0	2,846,646	59.4	981,320	20.5
1958.....	771,576	16.1	290,125	6.1	2,808,067	58.6	921,667	19.2
1959.....	785,802	15.7	281,462	5.6	3,083,151	61.4	871,257	17.3
1960.....	915,290	17.4	333,815	6.4	2,932,171	55.8	1,074,300	20.4
1961.....	909,344	15.8	328,854	5.7	3,107,176	54.0	1,409,612	24.5
1962.....	909,041	14.7	331,004	5.4	3,608,439	58.4	1,330,040	21.5
1963.....	1,006,838	14.8	391,526	5.8	3,766,380	55.4	1,653,785	24.0
1964.....	1,199,779	14.8	493,871	6.1	4,271,059	52.8	2,129,510	26.3
1965.....	1,174,309	13.8	502,330	5.9	4,840,456	56.8	2,007,984	28.6

<sup>1</sup> Includes Alaska and Hawaii.

### 3.—Trade of Canada with Commonwealth and Preferential Countries, and Other Countries, 1946-65—concluded

Item and Year	Britain		Other Commonwealth and Preferential Countries		United States <sup>1</sup>		Other Countries	
	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total
Imports	\$'000		\$'000		\$'000		\$'000	
1946.....	137,423	7.5	135,601	7.4	1,387,386	75.3	180,857	9.8
1947.....	184,207	7.2	164,553	6.5	1,951,606	76.8	242,293	9.5
1948.....	293,535	11.2	203,932	7.8	1,798,507	68.7	322,802	12.3
1949.....	302,420	11.1	186,306	6.9	1,915,227	70.6	310,072	11.4
1950.....	400,811	12.8	241,124	7.7	2,089,531	66.9	393,765	12.6
1951.....	415,194	10.4	306,287	7.6	2,752,087	68.7	531,371	13.3
1952.....	351,541	9.0	184,345	4.7	2,887,628	73.7	492,904	12.6
1953.....	445,441	10.5	170,224	4.0	3,115,301	73.3	516,842	12.2
1954.....	382,229	9.6	181,884	4.6	2,871,279	72.4	532,010	13.4
1955.....	393,117	8.6	209,265	4.6	3,331,143	72.9	634,229	13.9
1956.....	476,371	8.6	220,808	4.0	4,031,394	72.7	818,378	14.7
1957.....	507,319	9.3	239,054	4.4	3,887,391	71.0	839,582	15.3
1958.....	518,505	10.3	210,016	4.2	3,460,147	68.5	861,824	17.0
1959.....	588,573	10.7	241,241	4.4	3,709,065	67.3	970,042	17.6
1960.....	588,932	10.8	281,167	5.1	3,686,625	67.2	925,971	16.9
1961.....	618,221	10.7	292,155	5.1	3,863,968	67.0	994,233	17.2
1962.....	563,062	9.0	318,501	5.1	4,299,539	68.7	1,076,673	17.2
1963.....	526,800	8.0	400,820	6.1	4,444,556	67.8	1,186,033	18.1
1964.....	573,995	7.7	405,850	5.4	5,164,285	69.0	1,343,577	17.9
1965.....	619,121	7.2	372,863	4.3	6,045,105	70.0	1,596,342	18.5

<sup>1</sup> Includes Alaska and Hawaii.

### 4.—Trade of Canada, by Leading Countries, 1965, with Comparable Figures for 1963 and 1964

Rank in—			Item and Country	1963	1964*	1965
1963	1964	1965				
Domestic Exports				\$'000	\$'000	\$'000
1	1	1	United States.....	3,766,380	4,271,059	4,840,456
2	2	2	Britain.....	1,006,838	1,199,779	1,174,309
3	3	3	Japan.....	296,010	330,234	316,187
5	4	4	Union of Soviet Socialist Republics.....	150,213	315,943	197,362
4	5	5	Germany, Federal Republic.....	170,969	211,360	189,493
7	6	6	Australia.....	100,773	145,812	140,372
10	9	7	Belgium and Luxembourg.....	76,493	100,535	128,011
8	8	8	Netherlands.....	87,009	101,582	127,766
6	7	9	China, Communist.....	104,738	136,263	105,131
9	17	10	Italy.....	76,761	62,236	93,223
12	10	11	France.....	63,428	79,433	87,273
11	12	12	Norway.....	73,398	67,582	82,456
13	11	13	Republic of South Africa.....	60,299	69,166	76,226
16	14	14	Venezuela.....	46,328	64,075	73,045
15	15	15	India.....	53,900	64,042	58,453
26	18	16	Cuba.....	16,433	60,930	52,594
14	13	17	Mexico.....	55,572	65,151	51,006
18	20	18	New Zealand.....	30,549	33,714	36,845
29	19	19	Czechoslovakia.....	13,289	54,230	34,762
24	26	20	Spain.....	20,500	21,235	33,825
17	25	21	Argentina.....	36,992	26,889	32,720
20	16	22	Poland.....	27,200	62,653	31,565
21	22	23	Jamaica.....	22,271	28,942	30,280
23	21	24	Sweden.....	20,926	29,922	28,980
19	23	25	Switzerland.....	27,247	28,502	27,095
22	24	26	Philippines.....	21,284	27,809	26,354
30	30	27	Peru.....	11,641	10,749	21,864
25	27	28	Pakistan.....	19,152	20,031	21,643
27	28	29	Trinidad and Tobago.....	16,213	17,791	21,532
28	29	30	Puerto Rico.....	14,619	15,408	17,693
Totals, 30 Leading Countries.....				6,487,425	7,723,057	8,158,521
Grand Totals, Domestic Exports.....				6,798,529	8,094,219	8,525,078



#### 4.—Trade of Canada, by Leading Countries, 1965, with Comparable Figures for 1963 and 1964—concluded

Rank in—			Item and Country	1963	1964*	1965
1963	1964	1965				
Imports				\$'000	\$'000	\$'000
1	1	1	United States.....	4,444,556	5,164,285	6,045,105
2	2	2	Britain.....	526,800	573,995	619,121
3	3	3	Venezuela.....	243,495	270,621	254,670
5	4	4	Japan.....	130,471	174,388	230,204
4	5	5	Germany, Federal Republic.....	144,023	170,392	209,517
6	6	6	France.....	58,170	68,687	96,103
8	7	7	Italy.....	55,303	67,462	80,279
12	9	8	Belgium and Luxembourg.....	47,342	59,198	72,027
14	11	9	Netherlands.....	36,736	39,933	56,274
17	13	10	Sweden.....	33,410	38,794	55,568
7	8	11	Australia.....	55,650	59,827	47,317
18	14	12	Switzerland.....	32,469	36,932	43,986
9	15	13	India.....	52,664	36,121	43,424
16	17	14	Netherlands Antilles.....	35,999	34,885	43,341
11	25	15	Saudi Arabia.....	50,290	18,553	42,114
20	18	16	Malaysia.....	31,454	34,566	40,272
10	10	17	Jamaica.....	51,524	47,858	36,000
15	12	18	Brazil.....	36,361	39,533	35,573
23	21	19	Norway.....	23,492	27,335	33,641
13	19	20	Iran.....	42,799	31,085	31,765
24	22	21	Hong Kong.....	21,197	26,321	31,194
22	23	22	Mexico.....	23,734	23,186	27,247
19	20	23	Republic of South Africa.....	31,548	28,777	27,113
21	16	24	British Guiana (Guyana).....	31,334	35,653	22,549
28	26	25	Denmark.....	13,209	15,749	20,071
29	27	26	Panama.....	11,057	15,095	19,414
27	28	27	Colombia.....	13,576	14,889	16,812
25	24	28	Trinidad and Tobago.....	15,871	20,738	16,670
30	30	29	Czechoslovakia.....	9,204	12,847	15,965
26	29	30	New Zealand.....	14,067	14,076	14,870
Totals, 30 Leading Countries.....				6,317,805	7,201,781	8,328,206
Grand Totals, Imports.....				6,558,209	7,487,707	8,633,430

#### 5.—Value of Domestic Exports, by Geographic Region and Country, 1958-65

Region and Country	1958	1959	1960	1961	1962	1963	1964*	1965
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Western Europe—</b>								
Britain.....	771,576	785,802	915,290	909,344	909,041	1,006,838	1,199,779	1,174,309
Gibraltar.....	214	182	200	291	149	185	110	60
Ireland.....	8,690	8,156	7,706	11,588	10,329	10,461	15,072	16,664
Malta and Gozo.....	1,506	2,142	2,299	2,924	2,217	2,313	2,721	1,964
Austria.....	7,457	8,260	7,745	7,877	7,316	6,826	7,475	9,857
Belgium and Luxembourg.....	69,531	56,127	69,131	76,055	68,169	76,493	100,535	128,011
Denmark.....	4,859	5,449	4,978	4,813	6,087	6,811	7,484	9,176
Finland.....	2,312	2,739	4,355	6,085	5,240	7,277	4,458	4,792
France.....	44,688	43,157	72,907	71,923	57,561	63,428	79,433	87,273
Germany, Federal Republic.....	201,134	129,345	165,597	188,694	177,688	170,969	211,360	189,493
Greece.....	4,576	3,798	5,546	4,995	9,235	7,429	8,013	8,231
Iceland.....	310	279	243	219	287	347	10,459	10,228
Italy.....	29,718	31,717	68,393	67,688	74,521	76,761	62,236	93,223
Netherlands.....	74,721	53,849	62,554	61,297	76,940	87,009	101,582	127,766
Norway.....	55,849	62,308	61,595	69,744	69,054	73,398	67,582	82,456
Portugal.....	2,553	3,251	3,336	4,718	2,563	5,859	6,264	5,260
Spain.....	6,675	6,168	10,243	12,803	15,416	20,500	21,235	33,825
Sweden.....	10,866	14,879	20,906	17,654	18,230	20,926	29,922	28,980
Switzerland.....	29,243	25,728	26,404	22,422	23,891	27,247	28,502	27,095
Totals, Commonwealth and Preferential Countries.....	781,986	796,281	925,496	924,147	921,736	1,019,797	1,217,683	1,192,996
Totals, Other Countries.....	544,492	447,055	583,932	616,986	612,198	651,279	746,540	845,666
<b>Totals, Western Europe...</b>	<b>1,326,478</b>	<b>1,243,336</b>	<b>1,509,428</b>	<b>1,541,133</b>	<b>1,533,934</b>	<b>1,671,076</b>	<b>1,964,223</b>	<b>2,038,663</b>

## 5.—Value of Domestic Exports, by Geographic Region and Country, 1958-65—continued

Region and Country	1958	1959	1960	1961	1962	1963	1964 <sup>1</sup>	1965
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Eastern Europe—</b>								
Albania.....	1	1	1	5,845	3,053	2	10,873	9,471
Bulgaria.....	70	200	491	277	388	28	19,239	7,364
Czechoslovakia.....	1,342	4,937	6,767	32,654	3,522	13,289	54,230	34,762
Germany, Eastern.....	1	1	994	17,972	148	1,232	11,739	15,216
Hungary.....	384	1,115	931	564	350	374	1,910	8,352
Poland.....	560	15,631	16,665	36,819	37,391	27,200	62,653	31,565
Romania.....	1,171	1,157	1,326	1,037	514	1,275	540	641
Union of Soviet Socialist Republics.....	18,863	12,638	8,233	24,276	3,297	150,123	315,943	197,362
Yugoslavia.....	198	2,577	3,249	2,135	999	17,519	5,443	8,561
<b>Totals, Eastern Europe.....</b>	<b>22,587</b>	<b>38,255</b>	<b>38,658</b>	<b>121,579</b>	<b>49,662</b>	<b>211,071</b>	<b>482,568</b>	<b>313,294</b>
<b>Middle East—</b>								
Aden.....	2	2	2	2	2	2	2	193
Bahrain.....	2	2	112	111	210	162	151	160
Cyprus.....	4	4	609	70	298	513	193	261
Qatar.....	2	2	55	72	213	246	279	548
Trucial States.....	2	2	2	2	2	2	2	66
British Middle East, <i>n.e.s.</i> .....	1	7	61	165	159	127	138	1
Ethiopia.....	77	72	220	120	105	139	236	581
Iran.....	1,648	2,242	2,499	4,457	5,293	3,568	3,372	3,282
Iraq.....	969	4,311	2,425	1,374	1,343	3,376	957	734
Israel.....	4,501	4,557	6,184	8,747	6,232	8,163	9,109	6,261
Jordan.....	73	72	131	308	145	244	245	806
Kuwait.....	2	2	1,091 <sup>2</sup>	941 <sup>2</sup>	1,040 <sup>2</sup>	2,748	934	3,582
Lebanon.....	2,073	3,182	3,443	2,484	2,244	2,365	2,516	2,419
Libya.....	156	382	333	151	376	690	907	660
Saudi Arabia.....	2,017	2,877	2,905	2,697	3,257	3,548	3,133	5,343
Somalia.....	—	193	2	12	3	22	1	26
Sudan.....	182	367	335	333	180	173	113	120
Syria.....	765	1,067	674	364	561	713	387	665
Turkey.....	1,400	693	2,014	1,943	978	2,378	1,681	3,468
United Arab Republic—Egypt... .....	1,077	1,601	2,010	3,025	2,230	2,536	3,978	4,772
<b>Totals, Commonwealth and Preferential Countries.....</b>	<b>1</b>	<b>7</b>	<b>1,927<sup>2</sup></b>	<b>1,360<sup>2</sup></b>	<b>1,920<sup>2</sup></b>	<b>1,048</b>	<b>760</b>	<b>1,227</b>
<b>Totals, Other Countries.....</b>	<b>14,938</b>	<b>21,617</b>	<b>23,176</b>	<b>26,013</b>	<b>22,945</b>	<b>30,662</b>	<b>27,468</b>	<b>32,218</b>
<b>Totals, Middle East.....</b>	<b>14,939</b>	<b>21,624</b>	<b>25,103</b>	<b>27,373</b>	<b>24,866</b>	<b>31,710</b>	<b>28,229</b>	<b>33,446</b>
<b>Other Africa—</b>								
Gambia.....	8	8	8	8	8	212	71	162
Ghana.....	1,272	3,784	3,879	7,798	8,400	5,451	7,333	5,723
Kenya.....	472	806	936	958	680	1,003	911	4,605
Malawi.....	9	9	9	9	9	9	9	90
Mauritius and Dependencies.....	107	68	77	95	94	218	94	236
Nigeria.....	308	938	2,305	3,272	6,997	3,234	6,292	6,934
Northern Rhodesia.....	10	10	10	10	10	826	1,031	11
Nyasaland.....	10	10	10	10	10	99	156	12
Republic of South Africa.....	49,960	51,243	52,655	37,819	37,525	60,299	69,166	76,226
Rhodesia.....	13	13	13	13	13	13	13	3,841
Rhodesia and Nyasaland.....	3,894	2,851	4,088	3,396	3,367	14	14	15
Sierra Leone.....	501	725	641	1,200	1,298	1,298	1,329	1,134
Southern Rhodesia.....	10	10	10	10	10	3,637	3,150	16
Tanganyika.....	17	17	143	173	228	377	192	18
Tanzania.....	19	19	19	19	19	19	19	316
Uganda.....	17	17	86	66	137	148	259	1,167
Zambia.....	20	20	20	20	20	20	20	4,279
British Africa, <i>n.e.s.</i> .....	15	57	200	156	161	52	31	35
Algeria.....	21	21	4,662	6,064	2,202	3,970	1,212	228
Angola.....	22	22	67	160	44	104	75	228
Cameroon.....	21	21	21	21	92	24	39	157
Congo.....	2,926	2,689	1,310	980	889	921	1,127	872
French Equatorial Africa.....	21	21	34	57	5	21	21	21
French West Africa.....	21	21	135	73	775	21	21	21
French Africa, <i>n.e.s.</i> .....	1,008	2,765	10	26	9	92	214	226
Gabon.....	21	21	21	19	61	15	146	31

<sup>1</sup> Less than \$500.<sup>2</sup> Included with British Middle East, *n.e.s.*<sup>3</sup> Included with Saudi Arabia.<sup>4</sup> Included with Malta and Gozo.<sup>5</sup> See Aden and Trucial States.<sup>6</sup> Included with "Totals, Commonwealth and Preferential Countries".<sup>7</sup> Includes Kuwait.<sup>8</sup> Included with British Africa, *n.e.s.*<sup>9</sup> Formerly Nyasaland.<sup>10</sup> Included with Rhodesia and Nyasaland.<sup>11</sup> See Zambia.<sup>12</sup> See Malawi.<sup>13</sup> Formerly Southern Rhodesia.<sup>14</sup> See Northern Rhodesia. Southern Rhodesia and Nyasaland.<sup>15</sup> See Zambia, Rhodesia and Malawi.<sup>16</sup> See Rhodesia.<sup>17</sup> Included with Kenya.<sup>18</sup> See Tanzania.<sup>19</sup> Formerly Tanganyika.<sup>20</sup> Formerly Northern Rhodesia.<sup>21</sup> Included with French Africa, *n.e.s.*<sup>22</sup> Included with Portuguese Africa, *n.e.s.*

## 5.—Value of Domestic Exports, by Geographic Region and Country, 1953-65—continued

Region and Country	1958	1959	1960	1961	1962	1963	1964*	1965
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Other Africa—concluded</b>								
Guinea.....	1	1	9	140	131	2	4	81
Ivory Coast.....	1	1	1	26	10	18	66	49
Liberia.....	652	217	644	501	816	1,100	5,518	1,908
Malagasy.....	1	1	1	1	1	1	1	108
Mauritania.....	3	3	3	3	3	258	169	657
Morocco.....	1,152	416	627	476	459	963	667	391
Mozambique.....	1,326	2,012	3,145	2,023	2,504	2,646	1,806	3,282
Portuguese Africa, <i>n.e.s.</i> .....	320	305	279	241	197	283	164	367
Spanish Africa.....	2	2	28	40	118	27	229	112
Togo.....	1	1	1	1	105	350	443	317
Tunisia.....	1	1	170	561	30	1,970	327	86
Totals, Commonwealth and Preferential Countries.....	56,529	60,473	65,010	54,172	58,790	76,853	90,012	104,748
Totals, Other Countries.....	7,386	8,406	11,121	11,385	8,449	12,738	12,207	9,101
<b>Totals, Other Africa.....</b>	<b>63,915</b>	<b>68,878</b>	<b>76,130</b>	<b>65,558</b>	<b>67,239</b>	<b>89,591</b>	<b>102,219</b>	<b>113,849</b>
<b>Other Asia—</b>								
Ceylon.....	5,459	4,931	2,479	3,799	2,007	2,636	4,724	2,199
Hong Kong.....	6,028	11,192	21,665	19,604	14,283	17,490	22,278	16,734
India.....	78,994	53,654	36,814	42,885	29,633	53,900	64,042	58,453
Malaysia.....	3,223	3,258	4,660	5,696	5,453	6,999	8,370	9,253
Pakistan.....	15,311	17,317	11,942	15,315	10,755	19,152	20,031	21,643
British East Indies, <i>n.e.s.</i> .....	112	95	360	457	435	4	4	4
Afghanistan.....	24	67	159	55	25	18	23	23
Burma.....	944	817	806	1,405	1,303	703	736	671
Cambodia and Laos.....	5	5	148	114	2	17	9	128
China, Communist.....	7,809	1,720	8,737	125,448	147,438	104,738	136,263	105,131
Indonesia.....	1,665	1,760	2,110	2,463	2,027	1,449	703	1,636
Japan.....	104,853	139,724	178,859	231,574	214,535	296,010	330,234	316,187
Korea.....	3,682	6,000	3,916	2,067	1,492	3,815	1,096	823
Philippines.....	14,077	14,863	14,809	15,645	18,545	21,284	27,809	26,354
Portuguese Asia.....	341	358	93	59	22	38	41	48
Portuguese India.....	6	6	385	445	7	7	7	7
Taiwan (Republic of China).....	1,161	1,692	2,886	2,219	4,387	3,759	6,178	6,577
Thailand.....	1,288	1,937	2,710	2,921	3,472	2,823	3,803	5,621
Viet-Nam.....	249	385	540	206	298	250	726	804
Totals, Commonwealth and Preferential Countries.....	109,127	90,447	77,920	87,755	62,566	100,176	119,445	108,282
Totals, Other Countries.....	136,095	169,324	216,159	384,622	393,546	434,903	507,623	464,002
<b>Totals, Other Asia.....</b>	<b>245,222</b>	<b>259,771</b>	<b>294,079</b>	<b>472,376</b>	<b>456,112</b>	<b>535,079</b>	<b>627,068</b>	<b>572,284</b>
<b>Oceania—</b>								
Australia.....	52,562	53,929	98,862	78,628	104,965	100,773		140,372
Fiji.....	814	727	808	607	705	759	145,812	1,115
New Zealand.....	15,008	13,306	23,858	31,125	26,784	30,549	891	36,845
British Oceania, <i>n.e.s.</i> .....	98	65	324	191	296	249	33,714	317
French Oceania.....	271	171	313	303	366	299	436	508
United States Oceania.....	138	167	640	1,293	3,084	3,693	1,261	828
Totals, Commonwealth and Preferential Countries.....	68,483	68,027	123,852	110,551	132,750	132,330	180,804	178,650
Totals, Other Countries.....	409	338	953	1,596	3,451	3,992	1,697	1,336
<b>Totals, Oceania.....</b>	<b>68,892</b>	<b>68,365</b>	<b>124,805</b>	<b>112,147</b>	<b>136,201</b>	<b>136,322</b>	<b>182,501</b>	<b>179,986</b>
<b>South America—</b>								
British Guiana.....	4,014	4,392	7,428	5,272	5,102	5,061	7,116	7,750
Falkland Islands.....	53	216	169	24	13	6	1	4
Argentina.....	6,428	7,002	19,364	30,893	22,546	36,992	26,889	32,720

\* Included with French Africa, *n.e.s.*

\* Less than \$500.

\* Included with French West Africa.

\* Included with Malaysia.

\* Included with Viet-Nam.

\* Included with Portuguese Asia.

\* In-

cluded with India.



## 5.—Value of Domestic Exports, by Geographic Region and Country, 1958-65—concluded

Region and Country	1958	1959	1960	1961	1962	1963	1964 <sup>a</sup>	1965
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>South America—concluded</b>								
Bolivia.....	414	324	323	353	363	628	985	1,687
Brazil.....	21,088	14,148	19,755	30,076	28,481	29,432	22,985	17,509
Chile.....	4,566	6,226	6,575	8,225	13,278	12,329	12,659	10,514
Colombia.....	13,813	17,668	16,590	19,525	19,887	23,348	21,252	17,362
Ecuador.....	3,185	3,864	3,913	3,922	3,777	3,913	5,719	4,672
French Guiana.....	2	2	2	15	5	2	4	54
Paraguay.....	183	114	120	69	41	211	485	177
Peru.....	11,441	11,632	8,891	8,188	8,140	11,641	10,749	21,864
Surinam.....	853	696	883	1,224	866	1,031	1,610	1,283
Uruguay.....	938	1,656	2,423	3,039	3,151	2,994	5,679	3,283
Venezuela.....	43,480	45,833	35,345	34,978	42,328	46,328	64,075	73,045
Totals, Commonwealth and Preferential Countries.....	4,067	4,608	7,597	5,296	5,115	5,067	7,117	7,754
Totals, Other Countries.....	106,392	109,166	114,184	140,507	142,863	168,848	173,090	184,168
<b>Totals, South America.....</b>	<b>110,459</b>	<b>113,773</b>	<b>121,780</b>	<b>145,803</b>	<b>147,978</b>	<b>173,915</b>	<b>180,207</b>	<b>191,922</b>
<b>Central America and Antilles—</b>								
Bahamas.....	2,541	3,083	3,357	3,798	5,010	6,133	8,876	9,257
Barbados.....	4,159	4,103	3,775	3,977	4,481	5,469	6,922	6,826
Bermuda.....	3,195	4,334	4,016	4,239	4,492	5,713	6,339	5,984
British Honduras.....	229	289	409	600	835	698	973	1,065
Jamaica.....	15,588	18,538	18,056	19,077	21,891	22,271	28,942	30,280
Leeward and Windward Islands...	4,248	4,437	4,720	4,828	5,642	6,596	7,986	8,037
Trinidad and Tobago.....	11,548	12,636	12,971	18,398	14,817	16,213	17,791	21,532
Costa Rica.....	2,879	2,633	2,983	2,931	3,473	3,651	3,841	5,397
Cuba.....	17,549	15,222	13,038	21,104	10,878	16,433	60,930	52,594
Dominican Republic.....	5,335	5,137	5,062	4,469	8,488	9,085	9,070	6,152
El Salvador.....	2,146	2,567	2,390	2,436	3,354	3,134	4,416	4,051
French West Indies.....	26	19	43	75	53	66	135	144
Guatemala.....	3,645	2,627	2,106	2,188	2,705	3,107	3,433	4,001
Haiti.....	2,079	1,319	1,529	1,543	1,277	1,525	1,485	1,302
Honduras.....	1,201	946	1,416	1,061	899	1,100	1,260	1,005
Mexico.....	31,429	27,632	38,023	38,529	41,267	55,572	65,151	51,006
Netherlands Antilles.....	1,583	1,193	1,131	1,239	1,793	2,406	2,355	3,004
Nicaragua.....	1,886	1,515	1,319	1,448	2,135	2,693	2,209	2,805
Panama.....	5,370	4,023	3,703	4,578	5,645	4,417	4,602	4,622
Puerto Rico.....	12,526	10,522	11,172	13,109	12,711	14,619	15,408	17,693
United States Virgin Islands.....	132	185	214	190	283	284	1,317	1,671
Totals, Commonwealth and Preferential Countries.....	41,507	47,421	47,304	54,917	57,167	63,093	77,829	82,981
Totals, Other Countries.....	87,786	75,540	84,127	104,900	94,961	118,092	175,612	155,848
<b>Totals, Central America and Antilles.....</b>	<b>129,294</b>	<b>122,961</b>	<b>131,431</b>	<b>159,818</b>	<b>152,129</b>	<b>181,185</b>	<b>253,441</b>	<b>238,329</b>
<b>North America—</b>								
Greenland.....	138	154	427	198	167	287	272	137
St. Pierre and Miquelon.....	1,444	1,403	1,563	1,825	1,799	1,913	2,431	2,713
United States <sup>1</sup> .....	2,808,067	3,083,151	2,932,171	3,107,176	3,608,439	3,766,380	4,271,059	4,840,456
<b>Totals, North America.....</b>	<b>2,809,650</b>	<b>3,084,708</b>	<b>2,934,162</b>	<b>3,109,199</b>	<b>3,610,404</b>	<b>3,768,580</b>	<b>4,273,762</b>	<b>4,843,307</b>
<b>Grand Totals, Commonwealth and Preferential Countries..</b>	<b>1,061,701</b>	<b>1,067,263</b>	<b>1,249,104</b>	<b>1,238,198</b>	<b>1,240,045</b>	<b>1,398,364</b>	<b>1,693,650</b>	<b>1,676,638</b>
<b>Grand Totals, Other Countries</b>	<b>3,729,735</b>	<b>3,954,409</b>	<b>4,006,470</b>	<b>4,516,788</b>	<b>4,938,479</b>	<b>5,400,165</b>	<b>6,400,569</b>	<b>6,845,440</b>
<b>Grand Totals, All Countries.</b>	<b>4,791,436</b>	<b>5,021,672</b>	<b>5,255,575</b>	<b>5,754,986</b>	<b>6,798,523</b>	<b>6,798,529</b>	<b>8,094,219</b>	<b>8,525,078</b>

<sup>1</sup> Includes Alaska and Hawaii.

## 6.—Value of Imports, by Geographic Region and Country, 1958-65

Region and Country	1958	1959	1960	1961	1962	1963	1964*	1965
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Western Europe—</b>								
Britain.....	518,505	588,573	588,932	618,221	563,062	526,800	573,995	619,121
Gibraltar.....	1	1	2	1	—	—	13	2
Ireland.....	1,313	2,001	2,098	3,806	4,826	5,320	5,624	6,861
Malta and Gozo.....	62	174	22	25	36	232	113	387
Austria.....	4,640	5,707	6,605	6,636	7,971	9,026	9,595	12,281
Belgium and Luxembourg.....	35,759	44,786	41,401	44,780	48,672	47,342	59,198	72,027
Denmark.....	7,401	9,227	9,962	11,650	13,278	13,209	15,749	20,071
Finland.....	475	875	1,053	1,215	1,939	2,520	3,177	2,762
France.....	40,007	56,940	50,121	54,280	56,160	58,170	68,687	96,103
Germany, Federal Republic.....	102,644	123,905	126,988	136,530	141,198	144,023	170,392	209,517
Greece.....	316	310	538	545	1,094	1,631	1,550	1,838
Iceland.....	7	40	15	707	1,183	696	2	659
Italy.....	32,150	37,656	42,843	49,140	51,859	55,303	67,462	80,279
Netherlands.....	26,905	29,154	31,456	33,493	37,049	36,736	39,933	56,274
Norway.....	3,106	4,063	4,248	8,965	16,109	23,492	27,335	33,641
Portugal.....	3,045	3,116	3,208	4,917	5,998	7,713	9,414	11,053
Spain.....	6,681	5,627	6,947	8,543	8,463	8,496	11,704	13,280
Sweden.....	13,939	18,077	20,409	24,221	25,873	33,410	38,794	55,568
Switzerland.....	26,491	24,514	24,343	26,102	28,040	32,469	36,932	43,986
Totals, Commonwealth and Preferential Countries.....	519,881	590,748	591,054	622,053	567,924	532,352	579,746	626,370
Totals, Other Countries.....	303,566	363,996	370,138	411,722	444,887	474,236	559,924	709,338
<b>Totals, Western Europe....</b>	<b>823,446</b>	<b>954,744</b>	<b>961,191</b>	<b>1,033,775</b>	<b>1,012,811</b>	<b>1,006,588</b>	<b>1,139,670</b>	<b>1,335,709</b>
<b>Eastern Europe—</b>								
Albania.....	—	—	1	—	—	—	—	1
Bulgaria.....	4	6	6	24	34	74	114	526
Czechoslovakia.....	4,908	6,440	6,654	8,405	9,033	9,204	12,847	15,965
Germany, Eastern.....	948	901	877	970	881	1,207	1,473	1,584
Hungary.....	701	237	338	393	417	557	761	1,561
Poland.....	1,131	1,643	1,871	3,194	4,792	6,788	9,280	11,815
Romania.....	4	35	84	261	61	124	82	238
Union of Soviet Socialist Re- publics.....	1,676	2,278	3,210	2,746	1,777	2,313	2,808	9,885
Yugoslavia.....	813	551	804	1,665	1,801	1,543	2,601	2,967
<b>Totals, Eastern Europe....</b>	<b>10,185</b>	<b>12,090</b>	<b>13,844</b>	<b>17,659</b>	<b>18,795</b>	<b>22,109</b>	<b>29,966</b>	<b>44,541</b>
<b>Middle East—</b>								
Aden.....	3	2	2	2	2	2	2	353
Bahrain.....	3	3	—	1	—	1	—	—
Cyprus.....	4	4	180	194	151	88	48	291
Qatar.....	3	2	8,434	8,724	6,273	8,678	2,285	2,732
Trucial States.....	2	2	2	2	2	2	2	1,741
British Middle East, <i>n.e.s.</i> .....	62	400	59	48	68	56	3,183	5
Ethiopia.....	18	44	43	4	5	21	141	66
Iran.....	915	11,948	30,740	21,622	31,736	42,799	31,085	31,765
Iraq.....	1,556	1,107	722	846	704	1,269	2,379	5,284
Israel.....	1,725	2,349	2,372	3,106	5,646	6,043	6,270	6,656
Jordan.....	1	1	1	1	1	1	10	9
Kuwait.....	3	3	22,303 <sup>6</sup>	20,225 <sup>6</sup>	10,034 <sup>6</sup>	5,169	11,219	11,505
Lebanon.....	12	4	33	23	58	65	81	50
Libya.....	1	—	1	1	10	1	—	1
Saudi Arabia.....	68,021	70,725	37,402	41,393	40,551	50,290	18,553	42,114
Somalia.....	1	1	—	1	—	1	1	—
Sudan.....	80	438	83	76	105	148	113	138
Syria.....	200	183	127	263	455	362	492	515
Turkey.....	491	886	855	859	1,472	1,294	1,207	1,055
United Arab Republic—Egypt... .....	179	200	846	474	301	224	125	221
Totals, Commonwealth and Preferential Countries.....	62	400	30,975 <sup>7</sup>	29,192 <sup>7</sup>	16,525 <sup>7</sup>	8,823	5,516	5,118
Totals, Other Countries.....	73,198	87,887	73,224	68,668	81,044	107,688	71,675	99,379
<b>Totals, Middle East.....</b>	<b>73,261</b>	<b>88,286</b>	<b>104,200</b>	<b>97,861</b>	<b>97,569</b>	<b>116,511</b>	<b>77,191</b>	<b>104,496</b>

\* Less than \$500.

\* Included with British Middle East, *n.e.s.*

\* Included with Saudi Arabia.

\* In-

cluded with Malta and Gozo.

\* See Aden and Trucial States.

\* Included with "Totals, Common-

wealth and Preferential Countries".

\* Includes Kuwait.

6.—Value of Imports, by Geographic Region and Country, 1958-65—continued

Region and Country	1958	1959	1960	1961	1962	1963	1964 <sup>r</sup>	1965
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Other Africa—</b>								
Ghana.....	2,122	4,103	3,127	4,691	7,036	6,533	7,961	10,158
Kenya.....	5,057	4,261	2,561	3,629	3,157	5,323	7,997	6,862
Malawi.....	1	1	1	1	1	1	1	391
Mauritius and Dependencies.....	5,918	7,584	2,100	5,600	5,215	8,606	13,394	6,456
Nigeria.....	2,372	3,084	4,358	3,504	5,726	7,924	11,264	11,252
Northern Rhodesia.....	2	2	2	2	2	1,306	37	2
Nyasaland.....	2	2	2	2	2	408	297	4
Republic of South Africa.....	7,914	6,564	11,482	12,202	16,952	31,548	28,777	27,113
Rhodesia.....	5	5	5	5	5	5	5	3,408
Rhodesia and Nyasaland.....	1,373	966	981	1,318	3,272	6	6	7
Sierra Leone.....	2	2	5	8	22	5	3	311
Southern Rhodesia.....	2	2	2	2	2	6,320	4,279	8
Tanganyika.....	9	9	1,834	2,139	2,173	7,815	9,061	10
Tanzania.....	11	11	11	11	11	11	11	6,907
Uganda.....	9	9	1,277	2,325	2,213	3,144	4,582	6,800
Zambia.....	13	12	12	12	12	12	12	2
British Africa, <i>n.e.s.</i> .....	13	13	5	53	7	4	3	4
Algeria.....	14	14	161	162	509	458	61	98
Angola.....	15	15	209	136	122	728	1,297	1,415
Cameroon.....	14	14	14	14	15	14	43	121
Congo.....	1,125	2,258	1,781	1,314	1,320	1,421	1,911	1,661
French Equatorial Africa.....	14	14	185	27	8	14	14	14
French West Africa.....	14	14	270	1	13	14	14	14
French Africa, <i>n.e.s.</i> .....	1,749	2,183	33	29	17	310	1,263	68
Gabon.....	14	14	14	658	1,123	859	687	274
Guinea.....	14	14	2,794	4,824	896	2,501	1,707	1,066
Ivory Coast.....	14	14	14	788	244	227	623	247
Liberia.....	147	39	8	144	40	106	327	208
Malagasy.....	14	14	14	14	14	14	14	668
Morocco.....	130	209	222	14	487	540	1,162	278
Mozambique.....	24	18	1	30	139	395	431	633
Portuguese Africa, <i>n.e.s.</i> .....	11	—	—	—	13	—	—	—
Spanish Africa.....	7	8	2	17	23	39	22	6
Togo.....	14	14	14	14	—	—	—	6
Tunisia.....	14	14	62	32	17	2	19	19
Totals, Commonwealth and Preferential Countries.....	24,759	26,563	27,729	35,469	45,772	78,433	87,055	79,664
Totals, Other Countries.....	3,195	4,715	5,728	8,327	4,962	8,234	9,553	6,767
<b>Totals, Other Africa.....</b>	<b>27,954</b>	<b>31,278</b>	<b>33,456</b>	<b>43,796</b>	<b>50,734</b>	<b>86,667</b>	<b>96,608</b>	<b>86,431</b>
<b>Other Asia—</b>								
Ceylon.....	12,863	15,133	15,556	16,516	14,763	14,642	13,413	14,036
Hong Kong.....	8,689	12,969	15,534	14,143	18,889	21,197	26,321	31,194
India.....	27,655	29,221	29,352	33,465	43,479	52,664	36,121	43,424
Malaysia.....	19,863	28,644	28,120	23,597	27,740	31,634	34,566	40,272
Pakistan.....	460	1,061	985	2,367	2,561	2,270	4,211	3,654
British East Indies, <i>n.e.s.</i> .....	129	390	261	297	511	16	16	16
Afghanistan.....	—	—	—	13	—	—	—	—
Burma.....	84	24	85	30	—	50	—	39
Cambodia and Laos.....	17	17	17	2	—	102	276	—
China, Communist.....	5,370	4,840	5,638	3,233	4,521	5,147	9,420	14,444
Indonesia.....	211	147	529	290	173	152	1,393	2,365
Japan.....	70,092	102,669	110,382	116,007	125,359	130,471	174,388	230,204
Korea.....	21	235	404	76	99	380	473	1,468
Philippines.....	2,177	1,410	1,966	1,517	1,447	2,007	2,970	3,583
Portuguese Asia.....	1	13	—	—	77	428	1,204	1,919
Taiwan (Republic of China).....	159	748	1,150	1,856	2,910	5,875	9,063	9,333
Thailand.....	643	649	842	582	1,031	582	582	899
Viet-Nam.....	3	8	5	9	7	1	4	2
Totals, Commonwealth and Preferential Countries.....	69,659	87,418	89,807	90,384	107,943	122,407	114,633	132,580
Totals, Other Countries.....	78,762	110,728	121,020	124,202	135,673	145,145	199,772	264,256
<b>Totals, Other Asia.....</b>	<b>148,422</b>	<b>198,146</b>	<b>210,827</b>	<b>214,586</b>	<b>243,616</b>	<b>267,552</b>	<b>314,405</b>	<b>396,837</b>

<sup>1</sup> Formerly Nyasaland.<sup>2</sup> Included with Rhodesia and Nyasaland.<sup>3</sup> See Zambia.<sup>4</sup> See

land.

<sup>5</sup> Formerly Southern Rhodesia.<sup>6</sup> See Northern Rhodesia, Southern Rhodesia and Nyasa-<sup>7</sup> See Zambia, Rhodesia and Malawi.<sup>8</sup> See Rhodesia.<sup>9</sup> Included with Kenya.<sup>10</sup> See Tanzania.<sup>11</sup> Formerly Tanganyika.<sup>12</sup> Formerly Northern Rhodesia.<sup>13</sup> Less than<sup>14</sup> Included with French Africa, *n.e.s.*<sup>15</sup> Included with Portuguese Africa, *n.e.s.*<sup>16</sup> In-

cluded with Malaysia.

<sup>17</sup> Included with Viet-Nam.



## 6.—Value of Imports, by Geographic Region and Country, 1958-65—continued

Region and Country	1958	1959	1960	1961	1962	1963	1964 <sup>r</sup>	1965
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Oceania—</b>								
Australia.....	32,755	41,080	35,508	36,649	45,216	55,650	59,827	47,317
Fiji.....	5,727	4,764	6,481	2,512	3,144	8,588	7,401	4,801
New Zealand.....	11,540	8,594	10,099	10,546	12,005	14,037	14,076	14,870
British Oceania, <i>n.e.s.</i> .....	160	157	—	1	—	5	6	—
French Oceania.....	1	1	—	40	—	1	3,559	5,092
United States Oceania.....	—	1	21	55	214	27	28	138
Totals, Commonwealth and Preferential Countries.....	50,182	54,595	52,087	49,706	60,365	78,310	81,310	66,989
Totals, Other Countries.....	1	1	21	96	214	27	3,586	5,229
<b>Totals, Oceania.....</b>	<b>50,182</b>	<b>54,597</b>	<b>52,109</b>	<b>49,802</b>	<b>60,578</b>	<b>78,338</b>	<b>84,896</b>	<b>72,218</b>
<b>South America—</b>								
British Guiana.....	20,627	18,033	18,921	23,030	23,375	31,334	35,653	22,549
Falkland Islands.....	—	1	8	8	—	—	—	—
Argentina.....	5,357	3,380	3,611	3,399	5,649	5,352	5,938	5,400
Bolivia.....	132	166	443	883	957	70	289	384
Brazil.....	27,419	28,479	24,883	29,081	31,600	36,361	39,533	35,573
Chile.....	823	870	747	1,217	1,117	1,271	1,755	1,713
Colombia.....	16,574	15,827	12,784	13,023	15,658	13,576	14,889	16,812
Ecuador.....	4,962	7,623	11,018	7,682	8,611	7,625	9,353	8,546
French Guiana.....	1	—	—	—	—	1	—	—
Paraguay.....	347	746	760	874	378	831	547	455
Peru.....	2,326	3,978	3,037	4,233	3,225	3,770	7,792	9,053
Surinam.....	2,270	2,872	4,156	3,482	4,037	6,158	6,978	8,702
Uruguay.....	820	657	987	1,834	793	868	968	975
Venezuela.....	209,538	204,582	195,189	216,640	224,275	243,495	270,621	254,670
Totals, Commonwealth and Preferential Countries.....	20,627	18,034	18,929	23,038	23,375	31,334	35,653	22,549
Totals, Other Countries.....	270,568	269,180	257,615	282,349	296,329	319,379	358,664	342,283
<b>Totals, South America.....</b>	<b>291,194</b>	<b>287,213</b>	<b>276,544</b>	<b>305,387</b>	<b>319,703</b>	<b>350,714</b>	<b>394,317</b>	<b>364,832</b>
<b>Central America and Antilles—</b>								
Bahamas.....	146	233	2,614	484	217	426	412	533
Barbados.....	3,735	4,709	2,417	4,980	3,170	3,954	3,851	3,041
Bermuda.....	276	1,291	701	224	136	262	190	403
British Honduras.....	136	92	91	701	629	1,720	1,858	1,235
Jamaica.....	27,491	31,012	37,688	38,511	39,721	51,524	47,858	36,009
Leeward and Windward Islands.....	1,761	1,989	1,496	1,261	1,688	2,202	1,026	832
Trinidad and Tobago.....	9,807	12,731	14,512	14,375	14,100	15,871	20,738	16,670
Costa Rica.....	7,127	4,810	4,345	4,227	6,259	7,308	8,363	6,715
Cuba.....	18,836	12,011	7,243	5,034	2,803	13,041	3,464	5,304
Dominican Republic.....	2,689	1,634	1,586	1,269	1,912	2,281	5,093	2,050
El Salvador.....	1,186	3,899	829	1,807	1,848	1,960	3,356	2,696
French West Indies.....	—	7	28	426	326	278	263	552
Guatemala.....	3,585	2,718	3,256	2,536	1,796	2,557	2,422	2,879
Haiti.....	1,073	1,053	982	810	566	1,159	2,056	1,076
Honduras.....	4,903	2,905	3,352	7,391	7,617	6,888	7,670	10,193
Mexico.....	31,888	34,201	21,007	18,193	24,416	23,734	23,186	27,247
Netherlands Antilles.....	39,453	47,120	32,521	31,137	35,856	35,999	34,885	43,341
Nicaragua.....	2,657	306	170	208	107	383	727	247
Panama.....	7,478	8,889	6,066	6,168	8,321	11,057	15,095	19,414
Puerto Rico.....	1,433	1,780	2,904	2,359	2,713	2,399	3,554	2,759
United States Virgin Islands.....	44	32	32	1	1	1	3	—
Totals, Commonwealth and Preferential Countries.....	43,352	52,057	59,518	60,535	59,658	75,960	75,933	58,714
Totals, Other Countries.....	122,323	121,365	84,322	81,057	94,541	109,025	110,137	124,471
<b>Totals, Central America and Antilles.....</b>	<b>165,675</b>	<b>173,422</b>	<b>143,839</b>	<b>141,603</b>	<b>154,199</b>	<b>184,985</b>	<b>186,070</b>	<b>183,185</b>

<sup>1</sup> Less than \$500.

## 6.—Value of Imports, by Geographic Region and Country, 1958-65—concluded

Region and Country	1958	1959	1960	1961	1962	1963	1964 <sup>a</sup>	1965
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>North America—</b>								
Greenland.....	8	53	1	102	111	106	110	—
St. Pierre and Miquelon.....	19	27	60	42	118	84	189	76
United States <sup>2</sup> .....	3,460,147	3,709,065	3,686,625	3,863,968	4,299,539	4,444,556	5,164,285	6,045,105
<b>Totals, North America.....</b>	<b>3,460,174</b>	<b>3,709,145</b>	<b>3,686,685</b>	<b>3,864,111</b>	<b>4,299,769</b>	<b>4,444,746</b>	<b>5,164,585</b>	<b>6,045,181</b>
<b>Grand Totals, Commonwealth and Preferential Countries..</b>	<b>728,521</b>	<b>829,814</b>	<b>870,099</b>	<b>910,377</b>	<b>881,563</b>	<b>927,620</b>	<b>979,845</b>	<b>991,983</b>
<b>Grand Totals, Other Countries</b>	<b>4,321,971</b>	<b>4,679,107</b>	<b>4,612,597</b>	<b>4,858,201</b>	<b>5,376,213</b>	<b>5,630,589</b>	<b>6,507,862</b>	<b>7,641,446</b>
<b>Grand Totals, All Countries.</b>	<b>5,050,492</b>	<b>5,508,921</b>	<b>5,482,695</b>	<b>5,768,578</b>	<b>6,257,776</b>	<b>6,558,209</b>	<b>7,487,707</b>	<b>8,633,430</b>

<sup>1</sup> Less than \$500.<sup>2</sup> Includes Alaska and Hawaii.

The proportion of imports subject to duty varies widely between countries and geographic areas. Generally, the Canadian tariff imposes duties on a greater proportion of manufactured goods than of natural products. Countries supplying chiefly manufactures to Canada tend to have duties charged on a greater proportion of their goods and also to have relatively higher average ad valorem rates of duty charged on their goods than is the case with countries supplying chiefly natural products. Variations in the proportion of imports dutiable as between different countries or in the average ad valorem rates of duty charged on imports from different countries therefore do not necessarily indicate differences in the tariff relations between Canada and these countries.

## 7.—Values of Dutiable and Free Imports, by Geographic Region and Leading Countries, 1963-65

Region and Country	1963			1964 <sup>a</sup>			1965		
	Dutiable	Free	Total	Dutiable	Free	Total	Dutiable	Free	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Western Europe.....</b>	<b>576,783</b>	<b>429,805</b>	<b>1,006,588</b>	<b>650,727</b>	<b>488,944</b>	<b>1,139,670</b>	<b>791,303</b>	<b>544,406</b>	<b>1,335,709</b>
Britain.....	212,766	314,033	526,800	223,478	350,518	573,995	249,612	369,509	619,121
Austria.....	8,071	955	9,026	8,712	884	9,595	11,194	1,087	12,281
Belgium and Luxembourg.....	34,327	13,015	47,342	45,024	14,174	59,198	57,736	14,291	72,027
Denmark.....	8,861	4,348	13,209	10,876	4,874	15,749	13,380	6,691	20,071
France.....	45,279	12,891	58,170	54,879	13,808	68,687	79,064	17,039	96,103
Germany, Federal Republic.....	118,537	25,486	144,023	135,436	34,956	170,392	162,355	47,162	209,517
Italy.....	49,494	5,809	55,303	60,976	6,486	67,462	72,089	8,190	80,279
Netherlands.....	27,268	9,468	36,736	30,417	9,516	39,933	42,833	13,441	56,274
Norway.....	5,359	18,133	23,492	6,045	21,290	27,335	9,642	23,999	33,641
Spain.....	4,035	4,460	8,496	5,375	6,329	11,704	6,449	6,830	13,280
Sweden.....	24,646	8,764	33,410	28,075	10,719	38,794	36,935	18,634	55,568
Switzerland.....	25,202	7,267	32,469	27,303	9,630	36,932	32,738	11,248	43,986
<b>Eastern Europe.....</b>	<b>19,315</b>	<b>2,794</b>	<b>22,109</b>	<b>26,697</b>	<b>3,269</b>	<b>29,966</b>	<b>35,197</b>	<b>9,344</b>	<b>44,541</b>
Czechoslovakia.....	8,828	376	9,204	12,019	828	12,847	15,097	868	15,965
Poland.....	6,416	372	6,788	9,117	164	9,280	11,329	486	11,815
<b>Middle East.....</b>	<b>4,335</b>	<b>112,175</b>	<b>116,511</b>	<b>4,660</b>	<b>72,530</b>	<b>77,191</b>	<b>5,242</b>	<b>99,255</b>	<b>104,496</b>
Qatar.....	—	8,678	8,678	—	2,285	2,285	—	2,732	2,732
Iran.....	153	42,646	42,799	228	30,857	31,085	630	31,135	31,765
Iraq.....	91	1,178	1,269	129	2,250	2,379	82	5,202	5,284
Israel.....	2,954	3,089	6,043	3,238	3,032	6,270	3,164	3,491	6,656
Kuwait.....	—	5,169	5,169	2	11,217	11,219	7	11,498	11,505
Saudi Arabia.....	—	50,290	50,290	1	18,552	18,553	1	42,113	42,114

<sup>1</sup> Less than \$500.

7.—Values of Dutiable and Free Imports, by Geographic Region and Leading Countries, 1963-65—concluded

Region and Country	1963			1964 <sup>1</sup>			1965		
	Dutiable	Free	Total	Dutiable	Free	Total	Dutiable	Free	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Other Africa</b> .....	<b>40,521</b>	<b>46,146</b>	<b>86,667</b>	<b>38,050</b>	<b>58,558</b>	<b>96,608</b>	<b>27,907</b>	<b>58,524</b>	<b>86,431</b>
Ghana.....	1,959	4,574	6,533	2,283	5,678	7,961	3,465	6,693	10,158
Kenya.....	103	5,220	5,323	78	7,319	7,397	62	6,801	6,862
Mauritius and Dependencies.....	8,606	—	8,606	13,008	385	13,394	6,389	67	6,456
Nigeria.....	3,603	4,320	7,924	3,588	7,676	11,264	2,681	8,571	11,252
Republic of South Africa.....	18,054	13,494	31,548	13,709	15,068	28,777	10,915	16,198	27,113
Tanganyika.....	30	7,284	7,315	52	9,009	9,061	1	86	87
Tanzania.....	2	2	2	2	2	2	2	6,820	6,907
<b>Other Asia</b> .....	<b>177,147</b>	<b>90,405</b>	<b>267,552</b>	<b>219,899</b>	<b>94,506</b>	<b>314,405</b>	<b>289,067</b>	<b>107,770</b>	<b>396,837</b>
Ceylon.....	587	14,055	14,642	666	12,747	13,413	780	13,256	14,036
Hong Kong.....	20,606	592	21,197	25,341	980	26,321	30,091	1,102	31,194
India.....	25,712	26,952	52,664	9,867	26,254	36,121	15,120	28,305	43,424
Malaysia.....	2,450	29,004	31,454	2,824	31,742	34,566	2,617	37,656	40,272
China, Communist ....	2,018	3,129	5,147	5,030	4,390	9,420	8,638	5,805	14,444
Japan.....	117,993	12,478	130,471	160,974	13,414	174,388	213,570	16,634	230,204
Taiwan (Republic of China).....	5,585	290	5,875	8,772	291	9,063	8,898	435	9,333
<b>Oceania</b> .....	<b>49,068</b>	<b>29,270</b>	<b>78,338</b>	<b>45,244</b>	<b>39,652</b>	<b>84,896</b>	<b>30,572</b>	<b>41,646</b>	<b>72,218</b>
Australia.....	33,621	22,029	55,650	33,167	26,660	59,827	21,088	26,230	47,317
Fiji.....	8,572	16	8,588	7,391	10	7,401	4,787	14	4,801
New Zealand.....	6,847	7,219	14,067	4,650	9,426	14,076	4,560	10,310	14,870
<b>South America</b> .....	<b>85,127</b>	<b>265,586</b>	<b>350,714</b>	<b>100,371</b>	<b>293,946</b>	<b>394,317</b>	<b>103,114</b>	<b>261,718</b>	<b>364,832</b>
British Guiana.....	16,431	14,904	31,334	18,136	17,516	35,653	6,376	16,173	22,549
Brazil.....	20,669	15,692	36,361	25,214	14,319	39,533	22,250	13,323	35,573
Colombia.....	10,457	3,119	13,576	13,013	1,876	14,889	14,019	2,793	16,812
Ecuador.....	7,496	129	7,625	9,273	80	9,353	8,140	406	8,546
Venezuela.....	23,019	220,477	243,495	27,552	243,070	270,621	46,245	208,425	254,670
<b>Central America and Antilles</b> .....	<b>117,938</b>	<b>67,047</b>	<b>184,985</b>	<b>120,285</b>	<b>65,785</b>	<b>186,070</b>	<b>121,196</b>	<b>61,990</b>	<b>183,185</b>
Jamaica.....	16,543	34,981	51,524	16,193	31,665	47,858	6,729	29,271	36,000
Trinidad and Tobago..	6,227	9,644	15,871	9,487	11,251	20,738	6,436	10,234	16,670
Costa Rica.....	7,118	190	7,308	8,325	38	8,363	6,518	197	6,715
Honduras.....	6,698	170	6,868	7,435	235	7,670	9,994	199	10,193
Mexico.....	9,267	14,467	23,734	9,942	13,244	23,186	11,694	15,553	27,247
Netherlands Antilles ..	35,793	207	35,999	34,795	91	34,885	43,072	268	43,341
Panama.....	11,017	39	11,057	15,058	37	15,095	19,378	36	19,414
<b>North America</b> .....	<b>2,472,351</b>	<b>1,972,395</b>	<b>4,444,746</b>	<b>2,828,971</b>	<b>2,335,614</b>	<b>5,164,585</b>	<b>2,962,499</b>	<b>3,082,682</b>	<b>6,045,181</b>
United States.....	2,472,340	1,972,216	4,444,556	2,828,941	2,335,344	5,164,285	2,962,478	3,082,627	6,045,105
<b>Totals, Common-wealth and Preferential Countries</b> ...	<b>397,800</b>	<b>529,820</b>	<b>927,620</b>	<b>396,112</b>	<b>583,733</b>	<b>979,845</b>	<b>384,832</b>	<b>607,152</b>	<b>991,983</b>
<b>Totals, Other Countries</b> .....	<b>3,144,786</b>	<b>2,485,803</b>	<b>5,630,589</b>	<b>3,638,790</b>	<b>2,869,072</b>	<b>6,507,862</b>	<b>3,981,265</b>	<b>3,660,182</b>	<b>7,641,446</b>
<b>Grand Totals, Imports</b> .....	<b>3,542,585</b>	<b>3,015,623</b>	<b>6,558,209</b>	<b>4,034,903</b>	<b>3,452,804</b>	<b>7,487,707</b>	<b>4,366,096</b>	<b>4,267,334</b>	<b>8,633,430</b>

<sup>1</sup> See Tanzania.<sup>2</sup> Formerly Tanganyika.

## Section 4.—Trade by Commodity

This Section provides detailed information on the composition of Canada's exports and imports for 1964 and 1965. Table 8 shows exports and re-exports to and imports from all countries, Britain and the United States, classified by section; Table 9 gives detailed statistics of all commodities of any importance exported from Canada to all countries, to Britain and to the United States; and detailed statistics for imports into Canada by section and commodity appear in Table 10.



### 8.—Exports to and Imports from All Countries, Britain and the United States, by Section, 1964 and 1965

(Millions of dollars)

Section	Domestic Exports		Re-exports		Imports	
	1964 <sup>r</sup>	1965	1964	1965	1964 <sup>r</sup>	1965
<b>All Countries</b> .....	<b>8,094.2</b>	<b>8,525.1</b>	<b>209.2</b>	<b>241.6</b>	<b>7,487.7</b>	<b>8,633.4</b>
Live animals.....	34.5	79.1	0.1	0.1	17.1	10.8
Food, feed, beverages and tobacco.....	1,805.9	1,629.8	8.4	10.5	777.6	758.8
Crude materials, inedible.....	1,616.1	1,763.7	6.3	8.3	960.7	1,006.3
Fabricated materials, inedible.....	3,502.5	3,728.8	56.9	57.0	1,813.0	2,114.4
End products, inedible.....	1,109.0	1,300.1	134.6	160.2	3,701.2	4,476.6
Special transactions—trade.....	26.2	23.5	2.9	5.5	218.1	266.5
<b>Britain</b> .....	<b>1,199.8</b>	<b>1,174.3</b>	<b>7.3</b>	<b>11.0</b>	<b>574.0</b>	<b>619.1</b>
Live animals.....	--	0.1	--	--	0.4	0.1
Food, feed, beverages and tobacco.....	311.7	302.3	0.5	0.7	34.8	40.3
Crude materials, inedible.....	236.4	256.3	0.6	0.2	37.3	37.0
Fabricated materials, inedible.....	602.6	567.5	1.4	1.8	180.3	189.9
End products, inedible.....	48.6	47.7	4.8	8.3	313.3	342.7
Special transactions—trade.....	0.5	0.5	--	--	7.8	9.0
<b>United States</b> .....	<b>4,271.1</b>	<b>4,840.5</b>	<b>165.9</b>	<b>192.3</b>	<b>5,164.3</b>	<b>6,045.1</b>
Live animals.....	30.1	72.0	--	0.1	16.4	10.2
Food, feed, beverages and tobacco.....	362.0	408.9	6.9	7.3	356.1	374.5
Crude materials, inedible.....	978.6	1,012.1	4.6	6.7	443.0	490.8
Fabricated materials, inedible.....	2,237.2	2,481.7	52.5	51.5	1,197.1	1,350.2
End products, inedible.....	643.0	847.5	99.4	121.4	2,954.8	3,578.6
Special transactions—trade.....	20.1	18.3	2.5	5.4	196.9	240.7

### 9.—Domestic Exports from Canada to All Countries, to Britain and to the United States, by Section and Commodity, 1964 and 1965

Section and Commodity	All Countries		Britain		United States	
	1964 <sup>r</sup>	1965	1964	1965	1964	1965
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Live Animals</b> .....	<b>34,514</b>	<b>79,133</b>	<b>42</b>	<b>79</b>	<b>30,115</b>	<b>72,008</b>
<b>Food, Feed, Beverages and Tobacco</b> .....	<b>1,805,886</b>	<b>1,629,518</b>	<b>311,721</b>	<b>302,305</b>	<b>361,969</b>	<b>408,917</b>
Meat, fresh, chilled or frozen.....	36,065	59,542	3,930	4,865	27,657	47,680
Other meat and meat preparations.....	15,633	16,652	542	417	9,296	10,205
Fish, whole or dressed, fresh or frozen.....	41,501	44,239	4,164	4,263	32,102	34,265
Fish, fillets and blocks, fresh or frozen.....	52,861	65,131	2,422	1,073	50,046	62,909
Fish, preserved, except canned.....	25,528	23,444	81	49	6,212	6,540
Fish, canned.....	31,851	24,695	15,534	11,006	382	420
Shellfish.....	34,640	39,186	758	1,199	31,625	36,260
Dairy produce, eggs and honey.....	60,385	43,548	26,541	14,264	1,331	1,422
Barley.....	51,254	43,679	10,657	13,189	11,070	8,393
Wheat.....	1,023,516	840,175	147,423	140,383	7,828	1,625
Other cereals, unmilled.....	22,677	26,534	1,178	1,870	6,217	6,683
Wheat flour.....	100,255	66,305	21,692	19,482	1,342	1,706
Other cereals, milled.....	10,969	8,898	4	1,314	4,306	1,724
Cereal preparations.....	6,889	8,058	517	337	5,567	6,817
Fruits and fruit preparations.....	21,636	20,093	7,042	6,859	11,346	9,636
Vegetables and vegetable preparations.....	30,943	41,889	9,958	13,582	9,969	13,917
Sugar and sugar preparations.....	11,310	12,661	778	202	7,296	9,370
Other foods and materials for foods.....	19,698	18,910	3,123	3,690	9,085	7,894
Oil seed cake and meal.....	22,409	26,434	20,918	25,435	68	110
Other feeds of vegetable origin.....	22,082	21,276	1,504	1,732	17,549	15,248
Other fodder and feed.....	18,107	21,398	4,012	5,854	10,094	10,550
Whisky.....	102,820	116,983	305	465	96,876	110,558
Other beverages.....	4,493	4,724	9	13	4,371	4,539
Tobacco.....	38,365	35,363	28,627	30,761	332	646
<b>Crude Materials, Inedible</b> .....	<b>1,616,145</b>	<b>1,763,701</b>	<b>236,357</b>	<b>256,260</b>	<b>978,636</b>	<b>1,012,093</b>
Raw hides and skins.....	14,913	22,676	1,189	1,533	3,642	5,418
Fur skins, undressed.....	30,328	30,305	7,414	6,686	16,874	17,669
Other crude animal products.....	6,583	10,863	761	1,426	5,327	8,772
Seeds for sowing.....	12,768	13,720	2,738	2,578	7,391	6,858
Flaxseed.....	48,662	51,658	16,299	16,261	1	1

<sup>r</sup> Less than \$500.

**9.—Domestic Exports from Canada to All Countries, to Britain and to the United States, by Section and Commodity, 1964 and 1965—continued**

Section and Commodity	All Countries		Britain		United States	
	1964 <sup>1</sup>	1965	1964	1965	1964	1965
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Crude Materials, Inedible—concluded</b>						
Rapeseed.....	10,152	30,900	265	1,057	340	18
Other oil seeds, oil nuts and oil kernels..	9,484	15,562	5,761	9,558	1,461	2,075
Other crude vegetable products.....	13,233	14,053	168	173	12,472	12,996
Pulpwood.....	36,824	40,819	2,777	3,096	23,225	23,045
Other crude wood materials.....	18,162	18,511	675	908	13,369	13,244
Textile and related fibres.....	11,394	15,250	845	1,154	4,942	7,218
Iron ores and concentrates.....	356,007	360,819	35,714	31,803	293,900	285,062
Scrap iron and steel.....	20,598	8,265	369	1	8,365	6,611
Aluminum ores, concentrates and scrap..	8,679	11,529	287	107	3,048	4,995
Copper in ores, concentrates and scrap...	65,573	77,831	884	2,840	8,326	9,589
Lead in ores, concentrates and scrap.....	15,341	22,946	1,512	1,224	5,383	9,754
Nickel in ores, concentrates and scrap...	166,036	189,336	81,396	87,610	34,524	39,582
Precious metals in ores, concentrates and scrap.....	34,394	47,428	20,625	27,533	8,961	11,454
Zinc in ores, concentrates and scrap.....	54,776	69,849	1,384	1,910	20,259	31,093
Radioactive ores and concentrates.....	74,653	53,698	39,627	38,948	34,863	14,749
Other metals in ores, concentrates and scrap.....	7,383	20,873	1,235	6,086	2,400	4,598
Crude petroleum.....	262,023	279,956	—	—	262,023	279,956
Natural gas.....	97,609	104,280	—	—	97,609	104,280
Coal and other crude bituminous substances.....	12,836	13,045	1	—	3,460	2,368
Asbestos unmanufactured.....	155,706	158,657	11,782	11,865	62,996	65,195
Sulphur.....	20,404	27,470	406	—	8,833	10,215
Other crude non-metallic minerals.....	42,170	43,788	1,812	1,590	22,926	28,683
Other waste and scrap materials.....	9,458	9,614	433	315	11,717	6,597
<b>Fabricated Materials, Inedible.....</b>	<b>3,502,496</b>	<b>3,725,769</b>	<b>602,570</b>	<b>567,484</b>	<b>2,237,249</b>	<b>2,481,658</b>
Leather and leather fabricated materials	9,682	8,742	2,821	1,297	3,684	5,465
Lumber, softwood.....	449,732	457,967	77,773	77,286	313,754	314,563
Lumber, hardwood.....	27,614	31,967	3,069	2,946	23,512	28,408
Shingles and shakes.....	31,945	30,063	288	178	31,345	29,638
Other sawmill products.....	5,541	5,428	590	613	4,855	4,680
Veneer.....	28,811	31,580	17	45	26,290	27,909
Plywood.....	37,850	37,510	27,195	25,249	7,566	7,112
Other wood fabricated materials.....	7,246	7,663	1,628	1,804	4,871	5,056
Wood pulp and similar pulp.....	460,854	493,501	38,464	40,404	346,017	371,428
Newsprint paper.....	834,646	869,586	61,791	46,932	689,406	735,611
Other paper for printing.....	12,403	16,354	2,263	2,391	8,885	12,821
Paperboard.....	20,454	21,300	15,697	16,491	2,043	1,227
Other paper.....	30,334	30,804	10,937	7,760	9,159	12,091
Yarn, thread, cordage, twine and rope...	13,176	16,158	1,035	1,103	8,442	11,821
Broad woven fabrics.....	14,207	16,630	8,512	7,974	803	3,433
Other textile fabricated materials.....	12,160	16,113	1,779	1,690	1,788	3,008
Oils, fats, waxes, extracts and derivatives	21,544	24,319	11,982	12,130	2,270	2,047
Chemical elements.....	8,004	8,526	1,858	1,839	3,913	5,018
Other inorganic chemicals.....	31,269	35,907	5,901	6,916	17,311	18,922
Organic chemicals.....	48,244	55,172	14,889	14,425	22,193	29,636
Fertilizers and fertilizer materials.....	89,750	111,831	210	11	67,757	95,598
Synthetic rubber and plastics materials.	98,723	87,885	21,778	18,888	13,410	17,687
Plastics, basic shapes and forms.....	13,012	12,897	2,312	1,095	1,495	1,442
Other chemical products.....	9,605	10,302	723	1,517	4,465	5,065
Petroleum and coal products.....	24,864	22,572	596	528	20,348	20,630
Ferro-alloys.....	5,052	5,781	3,533	3,770	1,140	1,544
Primary iron and steel.....	76,410	65,906	13,459	787	53,513	57,445
Castings and forgings, steel.....	23,376	31,512	65	38	21,975	28,125
Bars and rods, steel.....	14,549	16,144	1,652	2,934	9,510	9,476
Plate, sheet and strip, steel.....	71,708	78,140	7,993	3,418	33,317	45,888
Rails and railway track material, steel..	21,634	11,600	—	—	905	840
Other iron and steel and alloys.....	15,804	20,691	349	489	10,323	11,914
Aluminum, including alloys.....	317,937	360,965	98,171	97,335	118,898	162,124
Copper and alloys.....	190,363	194,850	76,119	81,489	69,564	69,497
Lead, including alloys.....	22,496	41,243	9,245	19,819	7,851	9,953
Nickel and alloys.....	197,145	207,864	38,335	22,391	140,868	167,186
Precious metals, including alloys.....	14,914	17,589	10	20	14,694	17,500
Zinc, including alloys.....	62,345	71,588	25,846	29,092	20,749	26,369
Other non-ferrous metals and alloys.....	15,563	14,670	5,501	5,043	6,927	6,785
Metal fabricated basic products.....	35,303	43,039	2,232	2,812	23,763	28,359

<sup>1</sup> Less than \$500.

**9.—Domestic Exports from Canada to All Countries, to Britain and to the United States, by Section and Commodity, 1964 and 1965—concluded**

Section and Commodity	All Countries		Britain		United States	
	1964 <sup>1</sup>	1965	1964	1965	1964	1965
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Fabricated Materials, Inedible—concl.</b>						
Abrasive basic products	29,784	34,246	2,884	3,412	25,983	29,808
Other non-metallic mineral basic products	18,262	22,537	1,350	1,715	13,356	16,409
Electricity	18,003	15,492	—	—	18,003	15,492
Other fabricated materials, inedible	13,179	14,132	1,217	1,408	5,328	6,626
<b>End Products, Inedible</b>	<b>1,109,006</b>	<b>1,300,145</b>	<b>48,586</b>	<b>47,693</b>	<b>642,975</b>	<b>847,472</b>
General purpose industrial machinery	37,246	41,287	1,511	2,114	13,006	19,300
Materials handling machinery and equipment	13,499	21,342	109	232	10,046	16,795
Drilling, excavating, mining machinery	14,928	24,193	671	447	5,137	9,224
Metalworking machinery	8,967	12,571	710	1,048	6,055	7,952
Construction machinery and equipment	6,588	9,678	891	326	3,863	7,089
Plastics industry machinery and equipment	8,683	11,829	426	611	8,110	10,677
Woodworking machinery and equipment	10,784	11,760	832	810	3,872	4,762
Pulp and paper industries machinery	13,230	8,413	373	737	4,218	4,238
Other special industry machinery	21,705	19,397	2,274	1,939	10,846	11,795
Soil preparation, seeding, fertilizing machinery	24,577	22,618	62	243	23,449	21,273
Combine reaper-threshers and parts	67,376	85,657	1,696	1,351	61,629	73,693
Other haying and harvesting machinery	31,597	30,469	28	43	28,987	28,948
Other agricultural machinery and equipment	7,735	10,971	129	203	6,282	10,114
Tractors	9,387	12,216	406	195	7,308	10,939
Railway and street railway rolling-stock	28,880	7,586	—	1	524	1,230
Passenger automobiles and chassis	67,667	148,643	1,910	1,197	20,822	66,216
Other motor vehicles	14,474	34,530	34	71	5,526	24,353
Motor vehicle engines and parts	31,286	44,358	372	588	25,330	41,979
Motor vehicle parts, except engines	63,959	128,444	327	1,851	45,108	98,703
Ships and boats	20,709	17,712	935	1,230	9,976	10,988
Aircraft, complete with engines	152,134	105,266	—	—	116,893	81,374
Aircraft engines and parts	43,664	48,521	309	667	33,321	37,849
Aircraft parts, except engines	52,986	53,250	474	467	36,262	44,728
Other vehicles	3,405	3,151	1	28	3,273	3,038
Rubber tires and tubes	8,262	7,470	11	45	3,573	2,444
Communication and related equipment	51,907	70,769	1,641	1,601	33,774	48,511
Heating and refrigeration equipment	15,165	16,614	5,254	4,982	5,983	7,262
Cooking equipment for food	3,367	3,994	2,169	2,590	402	708
Electric lighting and distribution equipment	21,174	24,270	1,183	1,923	6,525	10,647
Navigation equipment and parts	51,221	49,922	222	171	22,111	29,858
Other measuring, controlling, laboratory, medical and optical equipment	21,175	19,860	1,549	1,858	11,148	11,436
Hand tools and miscellaneous cutlery	7,492	8,738	1,147	1,071	1,514	1,656
Office machines and equipment	37,005	32,288	3,107	1,457	7,770	10,610
Other equipment and tools	16,150	19,196	2,620	2,784	6,155	8,647
Apparel and apparel accessories	20,890	23,937	4,939	3,399	6,926	10,145
Footwear	5,371	4,902	952	317	3,158	3,697
Toys, games, sporting, recreation equipment	9,875	9,661	1,057	1,130	5,611	5,458
Other personal and household goods	15,167	13,924	2,877	2,776	4,466	3,577
Medicinal and pharmaceutical products	11,110	12,643	381	404	1,128	1,488
Medical, ophthalmic, orthopaedic supplies	2,039	1,992	69	106	798	796
Printed matter	10,019	10,629	677	702	7,523	7,971
Photographic goods	6,286	8,963	438	596	2,754	5,247
Firearms, ammunition and ordnance	8,743	11,369	795	870	6,152	7,534
Containers and closures	5,510	7,791	342	305	2,537	4,139
Prefabricated buildings and structures	11,295	9,399	287	258	5,170	5,701
Other end products	14,318	17,952	2,387	1,951	7,952	12,684
<b>Special Transactions—Trade</b>	<b>26,171</b>	<b>23,512</b>	<b>503</b>	<b>487</b>	<b>20,116</b>	<b>18,307</b>
Shipments valued at less than \$100 each	16,274	16,024	464	458	12,798	12,582
Other special transactions—trade	9,897	7,488	40	29	7,318	5,725
<b>Totals, Exports</b>	<b>8,094,219</b>	<b>8,525,078</b>	<b>1,199,779</b>	<b>1,174,309</b>	<b>4,271,059</b>	<b>4,840,456</b>

<sup>1</sup> Less than \$500.



**10.—Imports into Canada for Consumption from All Countries, from Britain and from the United States, by Section and Commodity, 1964 and 1965**

Section and Commodity	All Countries		Britain		United States	
	1964	1965	1964	1965	1964	1965
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Live Animals.....</b>	<b>17,124</b>	<b>10,801</b>	<b>432</b>	<b>125</b>	<b>16,365</b>	<b>10,246</b>
<b>Food, Feed, Beverages and Tobacco.....</b>	<b>777,596</b>	<b>758,836</b>	<b>34,817</b>	<b>40,320</b>	<b>356,071</b>	<b>374,527</b>
Meat, fresh, chilled or frozen.....	33,344	26,539	17	3,862	19,963	11,960
Other meat and meat preparations.....	13,582	15,122	293	278	8,163	9,134
Fish and marine animals.....	21,753	26,421	383	399	9,709	13,893
Dairy produce, eggs and honey.....	13,128	18,038	270	481	5,014	7,924
Indian corn, shelled.....	30,024	27,789	—	—	30,024	27,789
Other cereals and cereal preparations.....	24,056	28,256	4,006	4,108	17,592	19,957
Bananas and plantains, fresh.....	31,187	31,446	—	—	11	10
Grapes, fresh.....	18,364	19,987	1	3	17,285	18,764
Oranges, mandarins and tangerines, fresh.....	29,953	29,564	—	1	22,765	23,118
Other fresh fruits and berries.....	34,992	38,237	—	—	32,237	35,672
Fruits, dried or dehydrated.....	16,548	16,551	2	14	7,142	7,000
Orange juice and concentrates.....	22,085	15,270	35	12	15,076	12,419
Other fruit juices and concentrates.....	7,843	7,186	80	106	6,881	6,270
Fruits and products, canned.....	24,337	27,446	1,101	914	12,500	14,409
Other fruits and fruit preparations.....	8,690	11,503	49	115	2,236	2,813
Nuts, except oil nuts.....	14,604	16,189	106	179	4,919	5,954
Tomatoes, fresh.....	16,342	17,665	—	—	11,625	11,631
Other fresh vegetables.....	43,763	49,972	3	1	42,488	48,498
Other vegetables and vegetable preparations.....	20,203	23,158	565	496	12,770	13,869
Raw sugar.....	101,869	55,079	—	—	3	—
Refined sugar, molasses and syrups.....	8,198	5,701	263	249	2,171	1,711
Sugar preparations and confectionery.....	15,033	15,851	7,207	7,042	4,337	5,050
Cocoa and chocolate.....	20,578	19,957	2,422	2,010	875	777
Coffee.....	82,620	78,692	75	408	18,868	16,146
Tea.....	26,039	25,617	4,089	3,561	718	651
Other foods and materials for foods.....	33,133	36,310	1,141	1,201	21,032	22,722
Oil seed cake and meal.....	17,676	21,075	1	1	17,675	21,074
Other fodder and feed.....	4,398	5,744	97	131	3,581	5,340
Distilled alcoholic beverages.....	20,085	22,308	10,915	12,941	1,382	1,331
Other beverages.....	12,908	15,414	1,181	1,311	1,010	1,688
Tobacco.....	10,261	10,751	511	497	6,018	6,551
<b>Crude Materials, Inedible.....</b>	<b>960,662</b>	<b>1,006,274</b>	<b>37,304</b>	<b>36,995</b>	<b>443,025</b>	<b>490,848</b>
Fur skins, undressed.....	19,772	20,728	3,196	3,231	8,793	9,239
Other crude animal products.....	12,903	13,424	1,058	795	9,753	10,673
Soya beans.....	52,899	46,327	—	—	52,896	46,324
Other oil seeds, oil nuts and oil kernels.....	10,702	14,490	22	4	5,810	9,674
Rubber and allied gums, natural.....	22,699	21,789	19	2	2,298	2,212
Other crude vegetable products.....	20,509	21,481	252	204	14,852	15,247
Crude wood materials.....	22,376	29,400	—	—	22,087	29,210
Wool and fine animal hair.....	44,944	40,358	25,206	23,372	3,848	2,639
Cotton.....	65,297	68,454	27	44	62,043	53,363
Synthetic fibres.....	12,183	14,514	3,644	5,171	7,683	8,034
Other textile fibres.....	17,487	11,443	107	31	707	599
Iron ores and concentrates.....	67,287	60,550	—	—	63,488	58,130
Scrap iron and steel.....	27,438	36,111	—	2	27,319	36,060
Aluminum ores, concentrates and scrap.....	70,424	69,871	25	12	15,218	15,844
Other metals in ores, concentrates, scrap.....	24,475	29,135	1,577	1,748	6,431	6,725
Coal.....	86,472	126,200	113	102	86,360	126,098
Crude petroleum.....	320,637	312,259	—	—	—	—
Other crude bituminous substances.....	3,511	6,208	158	—	3,323	6,166
Abrasives, natural.....	8,549	8,528	643	530	7,404	7,144
Phosphate rock.....	11,719	13,991	—	—	11,145	13,734
Other crude non-metallic minerals.....	29,074	31,080	1,000	1,272	22,800	24,772
Other waste and scrap materials.....	9,303	9,935	258	476	8,767	8,961
<b>Fabricated Materials, Inedible.....</b>	<b>1,812,988</b>	<b>2,114,423</b>	<b>180,331</b>	<b>189,933</b>	<b>1,197,113</b>	<b>1,350,165</b>
Leather and leather fabricated materials.....	15,039	17,256	6,279	7,087	7,025	7,709
Rubber fabricated materials.....	26,912	26,074	1,770	2,077	22,511	21,805
Lumber.....	37,841	38,815	19	16	33,723	33,800
Veneer, plywood and wood building boards.....	20,511	19,612	106	167	6,268	7,121
Other wood fabricated materials.....	11,131	12,011	164	212	9,041	9,971
Wood pulp and similar pulp.....	11,333	14,137	16	13	10,001	12,171

<sup>1</sup> Less than \$500.

**10.—Imports into Canada for Consumption from All Countries, from Britain and from the United States, by Section and Commodity, 1964 and 1965—continued**

Section and Commodity	All Countries		Britain		United States	
	1964	1965	1964	1965	1964	1965
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Fabricated Materials, Inedible—concl.</b>						
Paper and paperboard.....	54,011	58,333		1,106		54,737
Cotton yarn and thread.....	13,887	14,539	4,229	3,584	50,695	5,741
Synthetic fibre yarn and thread.....	16,607	22,890		328	10,956	13,871
Other yarn and thread.....	18,948	13,526	8,190	6,781	3,787	3,483
Cordage, twine and rope.....	10,349	9,404	2,771	1,998	1,124	1,581
Broad woven fabrics, wool and hair.....	26,119	27,010	17,082	16,925	824	742
Broad woven fabrics, cotton.....	74,819	70,170	3,457	3,007	43,170	36,034
Broad woven fabrics, synthetic.....	24,753	25,755	1,466	1,511	13,753	11,513
Broad woven fabrics, mixed fibres.....	31,524	35,001	5,112	4,757	18,142	21,158
Coated or impregnated fabrics.....	23,568	25,901	1,798	1,451	2,587	2,762
Other textile fabricated materials.....	13,412	16,046	997	1,219	11,087	13,837
Vegetable oils and fats, except essential oils.....	35,184	39,305	2,616	2,415	25,106	30,045
Other oils, fats, waxes, extracts, derivatives.....	23,475	29,840	2,442	1,913	11,860	16,282
Inorganic chemicals.....	24,518	24,857	451	514	21,384	20,986
Organic chemicals.....	57,231	71,531	6,161	8,384	46,450	55,794
Fertilizers and fertilizer materials.....	93,918	106,649	10,893	10,191	72,451	83,008
Synthetic and reclaimed rubber.....	16,113	15,516	45	33	14,246	13,527
Plastics materials, not shaped.....	21,511	22,289	221	202	20,929	21,682
Plastic film and sheet.....	61,583	68,972	2,169	1,706	55,011	62,291
Other plastics basic shapes and forms.....	27,674	32,667	2,661	2,717	22,766	27,514
Dyestuffs, except dyeing extracts.....	16,398	20,888	607	613	14,951	19,220
Pigments, lakes and toners.....	15,942	17,054	1,890	1,887	7,829	8,011
Paints and related products.....	12,112	13,282	761	1,001	10,593	11,389
Other chemical products.....	9,164	10,396	482	644	8,540	9,656
Fuel oil.....	69,360	80,189	3,361	3,397	62,002	71,553
Lubricating oils and greases.....	76,988	109,395	1,066	3,674	12,653	12,874
Coke of petroleum and coal.....	18,516	21,458	190	400	16,833	19,145
Other petroleum and coal products.....	13,195	18,115	1	—	13,194	18,115
Bars and rods, steel.....	27,778	28,562	1,967	2,248	16,395	16,481
Plate, sheet and strip, steel.....	41,969	64,543	2,742	3,921	10,923	14,408
Structural shapes and sheet piling, steel.....	121,587	155,745	13,369	16,839	95,332	92,268
Pipes and tubes, iron and steel.....	48,622	64,924	4,412	6,456	26,551	29,480
Wire and wire rope, steel.....	43,097	48,161	6,282	4,952	22,772	28,724
Other iron and steel alloys.....	18,894	22,721	6,572	8,458	4,221	5,057
Aluminum, including alloys.....	27,902	41,545	641	1,693	20,586	29,680
Copper and alloys.....	39,584	49,348	3,710	3,698	34,503	42,781
Nickel and alloys.....	14,167	26,921	1,412	3,900	11,878	21,326
Precious metals, including alloys.....	24,181	29,876	189	205	6,470	8,688
Tin, including alloys.....	28,004	34,786	17,192	13,541	10,781	21,236
Other non-ferrous metals and alloys.....	17,604	21,755	1,305	30	1,732	3,223
Bolts, nuts and screws.....	15,200	17,903	505	508	11,879	12,786
Other basic hardware.....	20,852	25,763	754	973	17,748	21,128
Chain.....	30,506	34,222	2,282	2,622	24,722	27,604
Valves.....	11,015	12,811	1,885	2,022	6,617	7,865
Pipe fittings.....	23,319	28,502	1,830	2,217	20,131	24,674
Other metal fabricated basic products.....	17,287	23,242	1,929	2,195	13,051	16,840
Clay bricks, clay tiles and refractories.....	45,546	47,590	5,270	4,588	36,588	39,761
Sheet and plate glass.....	27,954	31,724	2,245	2,694	22,001	23,844
Other glass basic products.....	33,198	34,277	4,363	4,986	14,361	16,186
Abrasive basic products.....	17,205	19,674	1,145	1,307	13,436	15,397
Natural and synthetic gem stones.....	13,402	14,393	391	457	11,125	11,819
Other non-metallic mineral basic products.....	13,218	14,941	1,006	1,424	1,808	2,245
Electricity.....	20,051	20,876	2,013	2,434	15,171	15,021
Other fabricated materials, inedible.....	12,348	13,657	—	—	12,348	13,657
	34,851	37,075	3,826	3,234	27,335	29,035
<b>End Products, Inedible.....</b>	<b>3,701,202</b>	<b>4,476,616</b>	<b>313,349</b>	<b>342,701</b>	<b>2,954,801</b>	<b>3,578,574</b>
<b>A. MACHINERY.....</b>	<b>1,210,913</b>	<b>1,372,146</b>	<b>97,862</b>	<b>104,524</b>	<b>1,042,136</b>	<b>1,174,267</b>
Engines and turbines, diesel, general purpose.....	18,778	25,640	4,379	6,039	13,885	19,000
Engines and turbines, general purpose, n.e.s.....	25,389	29,243	3,850	1,243	20,891	27,539
Electric generators and motors.....	34,787	41,409	10,938	11,029	23,015	20,905
Bearings.....	41,565	50,576	3,177	4,158	32,286	37,501
Other mechanical power transmission equipment.....	31,784	39,918	3,490	4,556	27,533	34,748

**10.—Imports into Canada for Consumption from All Countries, from Britain and from the United States, by Section and Commodity, 1964 and 1965—continued**

Section and Commodity	All Countries		Britain		United States	
	1964	1965	1964	1965	1964	1965
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>End Products, Inedible—con.</b>						
<b>A. MACHINERY—concl.</b>						
Compressors, blowers and vacuum pumps.....	24,871	29,355	3,372	5,081	20,788	23,020
Pumps, except oil well pumps.....	16,364	19,130	864	1,306	14,772	16,704
Packaging machinery.....	19,327	21,652	618	1,080	17,787	19,445
Other general purpose industrial machinery.....	38,146	50,179	1,613	2,309	34,767	46,221
Cranes, derricks and hoists.....	25,034	36,713	1,083	935	22,023	32,208
Industrial lift trucks, powered.....	18,054	21,276	2,636	2,790	17,251	17,392
Other materials handling machinery, equipment.....	23,191	26,567	1,741	1,804	15,562	22,632
Drilling machinery and drill bits.....	38,094	41,693	879	751	35,334	39,111
Power shovels.....	23,866	27,363	132	123	23,327	26,572
Bulldozing and similar equipment.....	28,017	33,300	378	700	27,639	32,292
Front end loaders.....	34,022	42,227	317	444	33,675	41,724
Other excavating machinery.....	23,113	28,188	50	213	22,969	27,658
Mining, oil and gas machinery.....	31,317	36,421	1,975	2,790	28,364	31,462
Construction and maintenance machinery	31,521	39,597	866	1,331	29,600	36,861
Machine tools, metalworking.....	71,348	91,573	8,179	9,758	53,920	68,539
Welding apparatus and equipment.....	12,020	16,261	320	526	11,011	15,001
Rolling mill machinery.....	20,264	18,876	5,298	9,351	9,596	9,260
Other metalworking machinery.....	33,643	41,033	3,821	3,496	32,614	35,034
Pulp and paper industries machinery.....	34,233	31,434	9,338	2,814	21,329	21,288
Printing presses.....	20,472	15,765	4,035	1,917	13,077	11,009
Other printing machinery and equipment	17,009	16,964	513	710	15,778	15,537
Spinning, weaving and knitting machinery	35,624	28,763	2,927	2,752	28,854	20,063
Other textile industries machinery.....	24,457	24,117	2,636	2,327	18,991	18,454
Food, beverages and tobacco machinery.	24,587	23,741	2,204	2,050	19,007	17,847
Plastics and chemical industry machinery.....	20,639	28,250	915	1,291	18,282	22,609
Other special industry machinery.....	38,861	40,546	2,057	2,231	31,003	31,615
Soil preparation, seeding, fertilizing machinery.....	30,400	31,188	596	534	29,408	30,083
Combine reaper-threshers.....	49,059	50,435	333	142	45,786	48,801
Other haying and harvesting machinery.	33,185	35,176	132	262	32,346	34,104
Other agricultural machinery and equipment.....	34,573	37,403	384	430	32,939	35,430
Wheel tractors, new.....	97,635	103,205	8,957	11,728	85,852	89,180
Track-laying tractors and used tractors..	20,614	27,850	—	186	20,614	27,665
Tractor engines and tractor parts.....	65,050	69,120	2,859	3,338	60,261	63,752
<b>B. TRANSPORTATION AND COMMUNICATION EQUIPMENT.....</b>	<b>1,190,671</b>	<b>1,613,650</b>	<b>102,746</b>	<b>115,358</b>	<b>984,481</b>	<b>1,349,393</b>
Railway and street railway rolling stock.	20,927	28,130	934	2,285	19,588	23,173
Convertible automobiles, soft top, new..	18,333	24,109	9,356	7,132	7,788	14,927
Closed sedans, new.....	107,870	196,159	33,796	35,937	33,537	102,821
Other passenger automobiles and chassis.	12,526	18,112	2,426	2,260	2,968	7,684
Trucks, truck tractors and chassis.....	14,152	29,774	342	419	12,406	28,324
Other motor vehicles.....	22,786	37,925	645	1,174	18,717	27,702
Motor vehicle engines.....	30,063	54,927	3,041	1,235	25,888	51,183
Motor vehicle engine parts.....	72,315	80,797	1,751	1,671	69,182	77,135
Motor vehicle parts, except engines.....	539,777	683,025	7,239	7,207	528,306	669,630
Marine engines and parts.....	25,697	31,091	2,600	2,549	18,951	23,278
Ships, boats and parts, except engines.....	11,857	19,330	1,646	2,694	6,116	9,221
Aircraft, complete with engines.....	18,327	76,780	20	4,960	17,872	71,087
Aircraft engines and parts.....	50,252	60,698	13,535	18,572	36,702	41,468
Aircraft parts, except engines.....	68,670	69,233	4,705	7,007	63,802	61,916
Other transportation equipment.....	17,577	23,528	2,265	2,602	10,677	14,625
Telephone and telegraph equipment.....	24,647	25,009	5,415	4,235	15,845	17,664
Television and radio sets and phonographs	22,395	29,028	327	278	10,503	13,547
Electronic tubes and semi-conductors....	28,458	31,762	1,787	2,136	22,998	25,086
Other communication and related equipment.....	84,042	94,230	10,916	11,006	62,584	68,921
<b>C. OTHER EQUIPMENT AND TOOLS.....</b>	<b>607,167</b>	<b>712,541</b>	<b>31,563</b>	<b>37,124</b>	<b>521,524</b>	<b>598,394</b>
Air conditioning and refrigeration equipment.....	52,572	54,681	4,650	3,702	46,677	48,358
Electric lighting fixtures and portable lamps.....	20,631	26,644	423	481	17,074	21,974
Switchgear and protective equipment.....	16,880	20,497	1,154	1,268	13,352	15,483
Industrial control equipment.....	17,511	20,293	822	936	16,214	18,512



**10.—Imports into Canada for Consumption from All Countries, from Britain and from the United States, by Section and Commodity, 1964 and 1965—concluded**

Section and Commodity	All Countries		Britain		United States	
	1964	1965	1964	1965	1964	1965
<b>End Products, Inedible—concl.</b>	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>
C. OTHER EQUIPMENT AND TOOLS—concl.						
Other electric lighting, distribution equipment.....	33,228	42,107	1,415	3,483	29,320	31,916
Auxiliary electric equipment for engines.....	16,941	24,566	433	564	16,024	23,474
Miscellaneous measuring, controlling instruments.....	32,000	39,148	1,036	1,246	29,570	35,979
Medical and related equipment.....	24,504	28,001	778	1,233	22,162	24,548
Navigation equipment.....	17,088	20,050	554	561	16,204	19,215
Other measuring, laboratory equipment, etc.....	74,978	94,721	4,250	5,812	61,338	76,258
Safety and sanitation equipment.....	19,144	20,742	1,017	1,057	17,909	19,224
Service industry equipment.....	21,604	25,721	377	611	20,626	24,219
Furniture and fixtures.....	23,977	28,993	1,117	1,042	18,024	20,405
Hand tools and cutlery.....	47,667	53,564	6,718	7,635	34,032	37,820
Electronic computers.....	30,311	50,669	21	354	30,048	44,767
Other office machines and equipment.....	61,975	59,144	2,797	2,946	46,407	42,144
Miscellaneous equipment and tools.....	96,157	105,001	4,001	4,192	86,543	94,099
<b>D. PERSONAL AND HOUSEHOLD GOODS.....</b>	<b>292,034</b>	<b>317,794</b>	<b>50,724</b>	<b>52,122</b>	<b>97,639</b>	<b>102,112</b>
Outerwear, except knitted.....	31,367	37,439	2,259	2,351	6,350	7,745
Outerwear, knitted.....	17,373	21,381	4,352	4,670	1,524	1,638
Other apparel and apparel accessories.....	31,228	32,376	4,845	4,762	8,711	9,070
Footwear.....	24,824	27,067	4,535	5,055	1,989	1,963
Watches, clocks, jewellery and silverware.....	24,882	26,508	3,294	4,064	7,816	7,283
Sporting and recreation equipment.....	19,361	18,624	1,750	1,818	11,522	9,932
Games, toys and children's vehicles.....	21,862	23,005	2,778	3,014	9,029	10,162
House furnishings.....	34,762	40,050	6,168	6,468	12,149	14,923
Kitchen utensils, cutlery and tableware.....	42,597	43,787	15,003	15,268	16,718	15,625
Other personal and household goods.....	43,779	46,659	5,740	4,652	21,731	23,770
<b>E. MISCELLANEOUS END PRODUCTS.....</b>	<b>400,416</b>	<b>460,486</b>	<b>30,454</b>	<b>33,573</b>	<b>309,021</b>	<b>354,407</b>
Medicinal and pharmaceutical products.....	37,394	39,390	5,289	6,261	21,763	21,644
Medical, ophthalmic, orthopaedic supplies.....	22,196	20,914	1,009	790	17,906	16,593
Newspapers, magazines and periodicals.....	46,289	50,000	904	892	42,871	46,350
Books and pamphlets.....	55,653	68,715	5,707	6,554	44,846	55,285
Other printed matter.....	31,337	33,022	1,740	1,459	27,623	29,929
Stationers' and office supplies.....	20,203	23,574	2,214	2,741	15,289	17,249
Unexposed photographic film and plates.....	24,594	29,627	3,196	3,576	16,773	21,042
Other photographic goods.....	44,665	59,051	467	546	35,401	47,727
Containers and closures.....	43,266	52,171	1,252	1,240	41,017	47,964
Other end products, inedible.....	74,819	84,022	8,676	9,515	45,532	50,623
<b>Special Transactions—Trade.....</b>	<b>218,135</b>	<b>266,479</b>	<b>7,762</b>	<b>9,047</b>	<b>196,905</b>	<b>240,744</b>
Shipments valued at less than \$200 each.....	164,263	213,765	5,497	6,754	152,642	197,104
Other special transactions—trade.....	53,872	52,715	2,265	2,293	44,263	43,641
<b>Totals, Imports.....</b>	<b>7,487,707</b>	<b>8,633,430</b>	<b>573,995</b>	<b>619,121</b>	<b>5,164,285</b>	<b>6,045,105</b>

**Section 5.—Trade by Section and Stage of Fabrication**

This Section contains a series of statistics covering trade by stage of fabrication, based on the new commodity classification (see p. 968). The Section totals given in Tables 11 and 12 for the period from 1946 were compiled by converting statistics tabulated on the old classification to the new framework; old classes or fragments of classes were converted to appropriate new classes and changes in content, descriptions or codes of former classes were taken into account as much as possible, but the results for 1957 and previous years are subject to some limitations. (Description of this series continues on p. 992.)

## 11.—Domestic Exports by Section and Stage of Fabrication, 1946-65

Year	Sect. I Live Animals	Sect. II Food, Feed, Beverages and Tobacco				Sect. III Crude Materials, Inedible	Sect. IV Fabricated Materials, Inedible	Sect. V End Products, Inedible
		Crude Materials	Fabricated Materials	End Products	Total			
ALL COUNTRIES								
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1946.....	23,353	404,491	174,075	238,628	817,194	184,435	895,617	341,615
1947.....	20,083	431,802	240,076	214,329	886,207	221,976	1,239,004	375,028
1948.....	87,877	462,291	179,126	198,483	839,901	308,821	1,391,274	414,708
1949.....	68,903	624,451	135,622	150,567	910,640	310,326	1,309,755	366,917
1950.....	84,592	510,900	134,700	169,703	815,302	332,917	1,594,641	264,926
1951.....	65,304	724,844	167,782	160,012	1,052,638	430,885	1,972,438	357,615
1952.....	5,974	989,900	181,091	147,820	1,318,812	467,143	2,033,701	439,048
1953.....	17,884	913,797	157,674	171,432	1,242,903	476,429	1,949,365	396,694
1954.....	19,407	630,031	149,058	183,582	962,672	502,040	2,030,945	331,972
1955.....	15,645	560,297	152,112	173,088	885,498	685,912	2,363,743	290,384
1956.....	13,401	750,432	152,507	180,528	1,083,467	872,967	2,441,679	325,609
1957.....	53,999	603,474	141,317	166,661	911,453	1,025,398	2,406,062	369,271
1958.....	101,534	699,896	140,904	191,450	1,032,250	963,137	2,246,818	434,500
1959.....	55,790	660,221	159,886	199,584	1,019,691	1,086,994	2,461,089	386,658
1960.....	41,038	614,277	141,402	191,283	946,962	1,114,543	2,729,389	409,683
1961.....	66,901	865,451	138,688	193,664	1,197,803	1,195,442	2,777,345	505,591
1962.....	68,054	808,022	151,225	212,888	1,172,135	1,361,595	2,907,126	654,763
1963.....	41,971	1,012,475	157,532	249,850	1,419,857	1,425,951	3,106,898	779,138
1964.....	34,514	1,298,519	210,942	296,426	1,805,886	1,616,145	3,502,496	1,109,006
1965.....	79,133	1,142,518	194,010	293,290	1,629,818	1,763,701	3,728,769	1,300,145
BRITAIN								
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1946.....	466	202,389	69,258	107,607	379,253	39,039	147,040	28,300
1947.....	217	268,610	90,241	91,585	450,437	40,832	234,564	20,548
1948.....	226	234,056	76,524	83,279	393,859	46,178	228,256	14,670
1949.....	26	303,724	52,100	47,314	403,138	57,664	212,312	28,846
1950.....	7	185,672	43,858	45,189	274,719	47,211	140,023	5,850
1951.....	3	183,278	44,868	18,677	246,823	81,918	292,464	8,815
1952.....	12	241,233	39,428	2,327	282,993	95,694	356,227	9,424
1953.....	20	258,931	42,691	10,254	311,876	85,297	324,121	11,448
1954.....	18	184,747	36,323	14,045	235,115	86,914	254,446	4,476
1955.....	11	221,747	37,384	10,320	269,451	103,439	389,774	4,931
1956.....	22	232,322	46,878	13,734	292,934	130,636	380,952	6,558
1957.....	35	169,330	40,515	10,499	220,344	138,124	354,896	7,417
1958.....	275	218,328	33,790	29,672	281,790	139,653	330,172	19,611
1959.....	255	209,622	45,016	32,788	287,425	152,578	326,776	18,656
1960.....	210	195,553	42,975	19,718	258,246	178,936	460,357	17,338
1961.....	184	179,656	39,273	19,312	238,240	204,539	440,073	26,069
1962.....	105	191,434	51,235	27,612	270,282	172,050	455,774	30,624
1963.....	46	213,133	52,432	32,198	297,762	216,316	457,459	34,555
1964.....	42	207,202	54,186	50,334	311,721	236,357	602,570	48,586
1965.....	79	207,336	60,108	34,861	302,305	256,260	567,484	47,693
UNITED STATES								
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1946.....	17,646	83,139	16,587	51,422	151,148	119,903	547,073	41,413
1947.....	18,184	54,436	9,004	35,174	98,615	148,067	706,775	53,553
1948.....	85,156	137,550	15,876	47,995	201,420	208,311	901,061	96,541
1949.....	68,009	164,279	20,292	57,023	241,594	189,311	898,347	101,020
1950.....	83,888	185,424	26,034	75,437	286,896	222,462	1,311,568	105,726
1951.....	64,724	264,519	39,421	93,487	397,428	271,931	1,404,542	142,185
1952.....	5,554	246,428	46,125	99,481	392,034	277,607	1,426,767	187,297
1953.....	17,197	234,968	29,193	119,723	383,884	286,796	1,512,748	201,236
1954.....	18,510	176,121	29,482	120,485	326,087	296,559	1,471,992	184,101
1955.....	14,129	127,089	29,419	117,162	273,670	425,238	1,678,919	143,481
1956.....	11,020	154,550	31,843	125,437	311,829	556,047	1,755,733	151,984
1957.....	52,696	155,763	33,425	117,007	306,195	655,206	1,660,071	156,894
1958.....	99,919	161,693	31,935	124,204	317,832	652,435	1,554,720	178,454
1959.....	54,500	129,419	32,957	127,901	290,277	730,629	1,768,038	235,211
1960.....	39,121	125,188	32,860	129,923	287,971	676,879	1,698,231	220,700
1961.....	61,060	130,025	33,794	134,302	298,121	694,914	1,760,533	283,707
1962.....	64,422	121,930	42,366	141,485	305,780	884,041	1,968,046	375,905
1963.....	38,312	137,654	40,756	154,462	332,872	881,401	2,069,229	425,436
1964.....	30,115	144,645	49,163	168,161	361,969	978,637	2,237,248	642,975
1965.....	72,008	164,498	48,203	196,216	408,917	1,012,093	2,481,658	847,472

## 11.—Domestic Exports by Section and Stage of Fabrication, 1946-65

Sect. VI Special Transactions—Trade				Total Domestic Exports	Recapitulation Stage of Fabrication			Year
Crude Materials	Fabricated Materials	End Products	Total		Crude Materials	Fabricated Materials	End Products	
ALL COUNTRIES								
\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	
238	2,700	325	3,263	2,265,476	612,517	1,072,392	580,568	.....1946
300	5,472	361	6,133	2,748,431	674,161	1,484,552	589,718	.....1947
304	3,251	333	3,888	3,046,469	859,293	1,573,651	613,524	.....1948
141	2,120	148	2,409	2,968,948	1,003,821	1,447,497	517,632	.....1949
48	1,890	50	1,988	3,094,365	928,457	1,731,231	434,679	.....1950
36	3,200	37	3,273	3,882,153	1,221,069	2,143,420	517,664	.....1951
32	4,699	33	4,763	4,269,441	1,463,049	2,219,491	586,901	.....1952
25	2,863	26	2,914	4,086,190	1,408,135	2,109,902	568,152	.....1953
25	2,194	26	2,246	3,849,281	1,151,503	2,182,197	515,580	.....1954
27	3,621	1,799	5,447	4,246,630	1,261,881	2,519,476	465,271	.....1955
32	3,742	4,730	8,504	4,745,626	1,636,832	2,597,928	510,867	.....1956
1,850	3,225	7,540	12,616	4,778,799	1,684,721	2,550,604	543,472	.....1957
1,858	3,076	8,263	13,197	4,791,436	1,766,425	2,390,798	634,213	.....1958
1,981	2,832	6,638	11,450	5,021,672	1,804,986	2,623,807	592,880	.....1959
1,937	3,471	8,552	13,960	5,255,575	1,771,795	2,874,262	609,518	.....1960
4,337	403	7,164	11,903	5,754,986	2,132,131	2,916,436	706,419	.....1961
3,991	340	10,518	14,849	6,178,523	2,241,662	3,058,691	878,169	.....1962
9,771	748	14,196	24,714	6,798,529	2,490,168	3,265,178	1,043,184	.....1963
10,090	716	15,365	26,171	8,094,219	2,959,268	3,714,154	1,420,797	.....1964*
9,935	720	12,857	23,512	8,525,078	2,995,287	3,923,499	1,606,292	.....1965
BRITAIN								
\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	
4	33	4	41	594,138	241,898	216,331	135,911	.....1946
8	103	9	120	746,718	309,667	324,908	112,142	.....1947
—	61	—	61	683,249	280,460	304,841	97,949	.....1948
—	88	—	88	702,074	361,414	264,500	76,160	.....1949
—	85	—	85	467,896	232,890	183,966	51,039	.....1950
—	100	—	100	630,124	265,199	337,432	27,492	.....1951
—	110	—	110	744,461	336,944	395,765	11,751	.....1952
—	22	—	22	662,785	344,248	296,834	21,702	.....1953
—	63	—	63	651,033	271,679	360,832	15,521	.....1954
—	34	—	34	767,642	325,197	427,192	15,251	.....1955
—	11	—	11	811,113	362,980	427,841	20,292	.....1956
28	25	29	82	720,898	307,517	395,436	17,945	.....1957
26	22	27	75	771,576	358,282	363,984	49,310	.....1958
33	44	34	111	785,802	362,488	371,836	51,478	.....1959
42	80	81	203	915,290	374,741	503,412	37,137	.....1960
97	7	135	240	909,344	384,476	479,353	45,516	.....1961
101	7	97	205	909,041	363,690	487,016	58,333	.....1962
256	17	426	699	1,006,838	429,751	509,908	67,179	.....1963
287	28	188	503	1,199,779	443,888	656,784	99,108	.....1964
284	20	183	487	1,174,309	463,959	627,612	82,737	.....1965
UNITED STATES								
\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	
49	259	76	384	877,568	220,737	563,919	92,911	.....1946
69	359	111	539	1,025,732	220,756	716,138	88,838	.....1947
15	401	23	439	1,492,929	431,032	917,338	144,559	.....1948
36	390	38	464	1,498,745	421,635	919,029	158,081	.....1949
21	471	22	514	2,011,052	491,795	1,338,073	181,185	.....1950
11	473	12	496	2,281,306	601,185	1,444,436	235,684	.....1951
11	472	12	495	2,289,753	529,600	1,473,364	286,790	.....1952
10	514	11	535	2,402,397	538,971	1,542,455	320,970	.....1953
8	469	8	486	2,297,734	491,198	1,501,943	304,594	.....1954
10	481	10	500	2,535,938	566,466	1,708,819	260,653	.....1955
10	649	999	1,657	2,788,270	721,627	1,788,225	278,420	.....1956
1,482	906	3,115	5,503	2,836,565	865,147	1,694,402	277,016	.....1957
1,508	922	2,278	4,708	2,808,067	915,555	1,587,577	304,936	.....1958
1,617	1,094	1,784	4,495	3,083,151	916,165	1,802,089	364,896	.....1959
1,530	1,097	6,643	9,270	2,932,171	842,718	1,732,188	357,266	.....1960
3,519	97	5,225	8,841	3,107,176	889,518	1,794,424	423,234	.....1961
3,155	277	6,812	10,243	3,608,439	1,073,548	2,010,689	524,202	.....1962
7,801	571	10,758	19,130	3,766,380	1,065,168	2,110,556	590,656	.....1963
7,935	550	11,631	20,116	4,271,059	1,161,332	2,286,961	822,767	.....1964*
7,802	574	9,931	18,307	4,840,456	1,256,401	2,530,435	1,053,619	.....1965



## 12.—Imports by Section and Stage of Fabrication, 1946-65

Year	Sect. I Live Animals	Sect. II Food, Feed, Beverages and Tobacco				Sect. III Crude Materials, Inedible	Sect. IV Fabricated Materials, Inedible	Sect. V End Products, Inedible
		Crude Materials	Fabricated Materials	End Products	Total			
	ALL COUNTRIES							
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1946.....	3,058	154,846	64,948	39,961	259,755	410,417	499,194	642,651
1947.....	3,431	151,162	85,622	49,590	286,374	532,347	726,893	953,659
1948.....	3,399	136,009	91,012	51,660	278,681	685,117	741,106	879,520
1949.....	2,997	153,949	97,236	61,289	312,474	613,114	750,186	1,008,899
1950.....	2,307	200,920	114,570	66,513	382,003	744,771	825,408	1,146,341
1951.....	3,222	217,119	115,900	90,005	423,025	904,510	1,108,837	1,515,096
1952.....	3,593	215,351	98,051	90,071	403,474	711,674	1,036,545	1,690,063
1953.....	3,664	220,239	89,980	94,641	404,860	665,652	1,110,339	2,005,835
1954.....	3,800	253,481	99,736	100,289	453,507	600,823	1,012,813	2,181,972
1955.....	4,689	249,956	104,932	108,567	463,454	699,291	1,187,775	2,150,115
1956.....	5,375	279,318	114,798	129,540	523,656	825,787	1,528,130	2,590,053
1957.....	5,341	271,622	136,983	147,975	556,579	830,162	1,505,796	2,501,191
1958.....	5,955	280,722	123,986	156,004	560,712	690,140	1,313,053	2,402,125
1959.....	13,175	279,835	129,516	154,512	563,863	728,238	1,392,791	2,731,352
1960.....	7,426	298,651	120,476	155,519	574,647	744,993	1,343,775	2,718,262
1961.....	7,025	327,268	129,473	164,785	621,526	763,536	1,395,779	2,879,561
1962.....	7,561	355,310	143,314	158,139	656,763	826,523	1,487,419	3,152,226
1963.....	9,673	377,592	218,595	174,291	770,477	897,296	1,570,293	3,173,449
1964 <sup>r</sup> .....	17,124	395,475	187,316	194,806	777,596	960,662	1,812,988	3,701,202
1965.....	10,801	404,626	148,532	205,677	758,836	1,006,274	2,114,423	4,476,616
	BRITAIN							
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1946.....	166	12	45	5,012	5,069	10,822	74,618	45,744
1947.....	234	415	693	6,449	7,557	13,663	84,315	75,430
1948.....	265	357	1,768	10,756	12,881	30,351	134,579	106,160
1949.....	222	394	2,687	15,566	18,647	27,081	122,165	131,474
1950.....	260	1,901	4,834	15,400	22,135	40,607	143,958	191,162
1951.....	327	808	2,370	16,215	19,393	53,681	165,956	172,332
1952.....	248	1,116	4,014	16,511	21,641	24,006	131,690	168,694
1953.....	479	3,290	3,511	17,512	24,313	31,001	161,286	223,956
1954.....	286	4,780	3,632	17,081	25,493	23,518	141,962	185,898
1955.....	260	2,736	4,860	17,760	25,356	29,351	146,740	187,327
1956.....	360	2,548	5,260	17,871	25,679	28,750	196,514	219,421
1957.....	584	3,037	5,988	19,775	28,800	28,078	197,403	246,574
1958.....	470	3,897	6,765	20,074	30,736	24,040	169,043	288,543
1959.....	455	5,630	7,590	20,259	33,479	25,640	177,662	345,261
1960.....	198	4,283	8,338	20,226	32,848	25,236	167,531	357,012
1961.....	142	4,648	8,117	20,975	33,740	28,139	160,503	388,233
1962.....	516	4,138	7,441	20,316	31,894	31,428	176,785	316,929
1963.....	474	5,327	6,667	19,600	31,595	36,401	168,881	284,857
1964 <sup>r</sup> .....	432	4,425	3,161	27,230	34,817	37,304	180,331	331,349
1965.....	125	8,189	3,220	28,911	40,320	36,995	189,933	342,701
	UNITED STATES							
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1946.....	2,884	85,993	20,889	15,874	122,756	283,203	377,729	576,532
1947.....	3,178	83,596	25,828	25,747	135,170	371,694	554,679	851,470
1948.....	3,092	51,289	12,931	10,565	74,784	425,719	526,555	749,065
1949.....	2,757	63,425	17,895	21,096	102,416	383,150	560,106	845,094
1950.....	2,020	83,983	18,224	21,895	124,102	457,172	574,219	912,237
1951.....	2,859	100,452	23,113	33,113	156,677	487,395	773,655	1,287,352
1952.....	3,320	103,320	20,873	40,408	164,601	406,743	787,222	1,462,473
1953.....	3,124	99,745	23,322	47,026	170,093	358,721	829,921	1,703,389
1954.....	3,485	118,581	28,343	50,393	197,317	309,877	747,534	1,544,438
1955.....	4,325	122,434	29,572	55,031	207,038	339,248	874,934	1,851,874
1956.....	4,772	144,140	37,136	70,234	251,510	401,715	1,096,282	2,214,930
1957.....	4,422	139,380	36,087	81,133	256,600	397,193	1,095,931	2,071,619
1958.....	5,190	142,044	34,458	86,233	262,735	291,503	942,761	1,893,424
1959.....	12,300	147,892	41,304	83,876	273,072	300,646	955,179	2,103,953
1960.....	6,838	163,038	41,111	85,307	289,456	325,818	922,257	2,066,485
1961.....	6,493	187,883	45,536	87,214	320,133	335,902	943,086	2,178,165
1962.....	6,689	208,465	52,730	79,858	341,053	360,125	980,713	2,499,281
1963.....	8,888	218,332	53,972	85,653	357,958	383,907	1,036,299	2,534,050
1964 <sup>r</sup> .....	16,365	217,033	53,976	85,062	356,071	443,025	1,197,118	2,954,801
1965.....	10,246	223,372	60,732	90,423	374,527	490,848	1,350,165	3,578,574

## 12.—Imports by Section and Stage of Fabrication, 1946-65

Sect. VI Special Transactions—Trade				Total Imports	Recapitulation Stage of Fabrication			Year
Crude Materials	Fabricated Materials	End Products	Total		Crude Materials	Fabricated Materials	End Products	
ALL COUNTRIES								
\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	
2,604	6,182	14,494	23,280	1,838,356	570,925	570,324	697,106	.....1946
4,100	9,661	24,501	38,262	2,540,966	691,040	822,176	1,027,750	.....1947
2,429	6,561	21,445	30,436	2,618,258	826,954	838,679	952,625	.....1948
2,449	8,320	15,577	26,354	2,714,025	772,509	855,751	1,085,765	.....1949
2,198	8,617	13,528	24,343	3,125,172	950,196	948,595	1,226,382	.....1950
3,826	13,661	32,763	50,249	4,004,939	1,128,677	1,238,398	1,637,864	.....1951
4,988	16,505	49,576	71,069	3,916,418	935,606	1,151,101	1,829,710	.....1952
5,039	17,457	34,962	57,458	4,247,808	894,594	1,217,776	2,135,438	.....1953
6,397	19,776	51,313	77,486	3,967,401	864,501	1,132,325	1,970,574	.....1954
6,670	19,231	36,529	62,431	4,567,754	960,606	1,311,938	2,295,211	.....1955
7,533	26,668	39,750	73,951	5,546,952	1,118,013	1,669,596	2,759,343	.....1956
7,704	26,467	40,106	74,277	5,473,346	1,114,829	1,669,246	2,689,272	.....1957
8,348	26,864	43,297	78,508	5,050,492	985,165	1,463,903	2,601,426	.....1958
8,196	28,862	42,444	79,501	5,508,921	1,029,444	1,551,169	2,928,308	.....1959
10,322	30,326	52,945	93,593	5,482,695	1,061,392	1,494,577	2,926,726	.....1960
11,430	31,490	58,231	101,152	5,768,578	1,109,259	1,556,742	3,102,577	.....1961
15,727	31,025	80,531	127,284	6,257,776	1,205,121	1,661,758	3,390,896	.....1962
17,301	31,195	88,525	137,021	6,558,209	1,301,862	1,820,083	3,436,265	.....1963
27,222	50,816	140,097	218,135	7,487,707	1,400,483	2,051,120	4,036,105	.....1964*
33,118	62,293	171,068	266,479	8,633,430	1,454,819	2,325,248	4,853,361	.....1965
BRITAIN								
\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	
5	529	467	1,001	137,420	11,005	75,192	51,223	.....1946
142	931	1,933	3,006	184,205	14,454	85,939	83,812	.....1947
141	1,498	7,659	9,298	293,533	31,114	137,845	124,575	.....1948
90	1,658	1,083	2,631	302,420	27,787	126,510	148,123	.....1949
72	2,055	544	2,671	400,793	42,840	150,847	207,106	.....1950
87	2,704	715	3,506	415,194	54,903	171,030	189,262	.....1951
106	2,723	2,467	5,296	351,576	25,476	138,427	187,672	.....1952
162	3,129	1,115	4,406	445,441	34,932	167,926	242,583	.....1953
254	2,845	1,973	5,073	382,229	28,838	148,439	204,952	.....1954
173	2,881	1,031	4,084	393,117	32,520	154,481	206,118	.....1955
203	4,359	1,085	5,647	476,371	31,861	206,133	238,377	.....1956
219	4,519	1,142	5,879	507,319	31,918	207,910	267,491	.....1957
247	4,146	1,279	5,673	518,505	28,654	179,954	309,896	.....1958
267	4,448	1,362	6,077	588,573	31,992	189,700	366,882	.....1959
295	4,316	1,497	6,107	588,932	30,012	180,185	378,735	.....1960
489	4,506	2,470	7,464	618,221	33,418	173,126	411,678	.....1961
603	1,834	3,073	5,510	563,062	36,685	186,060	340,318	.....1962
582	1,054	2,955	4,591	526,800	42,784	176,602	307,412	.....1963
978	1,772	5,013	7,762	573,995	43,139	185,264	345,592	.....1964*
1,137	2,064	5,846	9,047	619,121	46,446	195,217	377,458	.....1965
UNITED STATES								
\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	
2,564	5,067	13,748	21,380	1,384,485	374,644	403,685	606,154	.....1946
3,818	8,034	21,872	33,723	1,949,914	462,286	588,541	899,089	.....1947
2,063	4,277	12,636	18,975	1,798,490	482,163	544,063	772,266	.....1948
2,236	5,582	13,885	21,704	1,915,227	451,568	583,588	880,075	.....1949
2,030	5,270	12,482	19,782	2,089,531	545,205	597,713	946,614	.....1950
3,650	8,904	31,594	44,149	2,752,087	594,356	805,672	1,352,050	.....1951
4,780	11,858	46,595	63,233	2,887,593	518,163	819,953	1,549,476	.....1952
4,780	11,904	33,272	49,956	3,115,205	466,370	865,147	1,783,687	.....1953
5,938	14,406	48,283	68,628	2,871,279	437,881	790,283	1,643,114	.....1954
6,276	13,081	34,367	53,725	3,331,143	472,283	917,587	1,941,272	.....1955
7,133	17,444	37,608	62,185	4,031,395	557,760	1,150,862	2,322,772	.....1956
7,256	16,579	37,791	61,626	3,887,391	548,251	1,148,597	2,190,543	.....1957
7,790	16,313	40,433	64,535	3,460,147	446,527	993,532	2,020,090	.....1958
7,576	17,043	39,296	63,915	3,709,065	468,414	1,013,526	2,227,125	.....1959
9,410	18,000	48,361	75,771	3,686,625	505,104	981,368	2,200,153	.....1960
10,178	18,048	51,963	80,189	3,863,968	539,956	1,006,670	2,317,342	.....1961
14,217	24,540	72,922	111,678	4,299,539	589,496	1,057,983	2,652,661	.....1962
15,813	26,006	81,035	123,454	4,444,556	626,940	1,116,877	2,700,738	.....1963
24,764	44,549	127,593	196,905	5,164,285	701,187	1,295,643	3,167,456	.....1964*
29,920	56,097	154,728	240,744	6,045,105	754,386	1,466,994	3,823,725	.....1965

To classify exports and imports by Stage of Fabrication, that is, within the categories of Crude Materials, Fabricated Materials and End Products, requires a secondary classification of the commodities in certain Sections. Live Animals (Sect. I), being a natural product, is considered as crude materials; Food, Feed, Beverages and Tobacco (Sect. II) is allocated as follows: Crude Materials includes natural products not further processed than cleaned or prepared for shipment; Fabricated Materials includes commodities which are further processed and are used in processing industries rather than for direct human consumption, and also all commercial stock feeds; End Products includes commodities which are further processed and are mainly used directly for human consumption, and also prepared pet feeds. Sects. III, IV and V are clearly defined in the Standard Commodity Classification. Sect. VI contains relatively few classes; these have been pro-rated as necessary for both exports and imports according to studies undertaken over a number of years.

**Exports.**—An analysis of the figures for 1946-65 shows that the export totals followed an almost constantly upward trend, advancing 3.8 times, the most pronounced gains being made in 1959-65. Every Section recorded increases, ranging from 2.0 times for Food, Feed, Beverages and Tobacco, 3.4 times for Live Animals, 3.8 times for End Products, Inedible, 4.1 times for Fabricated Materials, Inedible to 9.6 times for Crude Materials, Inedible. Food, Feed, Beverages and Tobacco recorded a slight decrease in 1965 compared with 1964. During the period a variety of trends were discernible: Live Animals accounted for only about 1.0 p.c.; Food, Feed, Beverages and Tobacco accounted for a declining proportion ranging from 36.1 p.c. in 1946 to 18.0 p.c. in 1960 and 19.1 p.c. in 1965; and Crude Materials, Inedible rose from 8.1 p.c. in 1946 to 22.0 p.c. in 1962 and 20.7 p.c. in 1965. Fabricated Materials, Inedible accounted for the greatest proportion of the exports, averaging about 48 p.c. over the period. End Products, Inedible, in the five latest years, recovered the relative importance (13.7 p.c.) it had in 1946-49 when the over-all export totals were less than half those of today. Special Transactions—Trade remained unimportant at 0.2 p.c.

Analysis of exports by stage of fabrication shows that Crude Materials accounted for 35.1 p.c. of total exports in 1965, having increased 4.9 times since 1946 with larger advances in 1960-65. Fabricated Materials increased 3.7 times since 1946 and accounted for a decreased proportion of about 48 p.c. in the five latest years; End Products, although lower during a good portion of the 1946-64 period, increased substantially in the two latest years to almost threefold the 1946 total, and in 1965 accounted for some 19 p.c. of total exports.

**Imports.**—Total imports also showed an increasing trend; they advanced 4.7 times during the period 1946-65 but, except for 1965, aggregate gains since 1960 were less than those shown by exports. Food, Feed, Beverages and Tobacco, which accounted for about 10 p.c. of the total, increased 2.9 times; Crude Materials, Inedible, although increasing 2.4 times during the period, showed a consistently decreasing relative importance from a peak of 26.2 p.c. in 1948 to 11.7 p.c. in 1965. Fabricated Materials, Inedible, which also decreased in importance, increased 4.2 times; End Products, Inedible, the proportion for which fluctuated around 48 p.c. over the past ten years, increased 7.0 times; and Special Transactions—Trade, rose 11.4 times.

In the stage-of-fabrication analysis, Crude Materials increased 2.5 times in the 1946-65 period but accounted for a relatively decreasing proportion of total imports, dropping from a peak of 30.4 p.c. in 1950 to an average of about 20.0 p.c. in 1954-65; Fabricated Materials increased 4.1 times in 1946-65 with marked advances in the 1954-65 period; End Products advanced 7.0 times the 1946 value with greatest increases in the 1954-65 period and accounted for 56.2 p.c. of the total compared with 37.9 p.c. in 1946, averaging about 52.0 p.c. over the 1954-65 period.



## PART II.—THE GOVERNMENT AND FOREIGN TRADE

### Section 1.—Federal Foreign Trade Services\*

Foreign trade contributes substantially to the welfare and prosperity of Canadians, largely because the productive capacity of Canada is greater than the ability of its population to consume the output of farms, factories, forests, fisheries and mines. Every effort is made, therefore, to establish and maintain close commercial relations with other countries whose markets are essential to the Canadian economy. It is appreciated, however, that two-way trade should be encouraged so that goods and services may be accepted in partial payment for the products Canada is in a position to export. Furthermore, many commodities not indigenous to this country must be imported. Some of these are required for industrial processes and others may be classed as consumer goods necessary for the maintenance of the Canadian standard of living.

Although numerous private firms have established connections in other countries that enable them to maintain a steady flow of goods in either direction, others require the assistance of government agencies in finding markets or sources of supply. Import and export controls imposed by many countries for a variety of reasons, together with foreign exchange difficulties, present problems that no single firm or even an association of manufacturers, exporters or importers can solve without assistance from government representatives. The federal Department of Trade and Commerce, the primary function of which is the promotion of external trade, makes available to business men a wide variety of services to assist them in selling their products abroad. These services are provided by the Department's head office in Ottawa, six regional offices in Canada, and a corps of trade commissioners stationed around the world.

Services available from the various branches, divisions and agencies of the Department of Trade and Commerce are described below. The work of these entities is interrelated, each operating in its own field but working closely with the others to effect the over-all objective of trade promotion.

**Trade Commissioner Service.**—The Trade Commissioner Service, as the overseas arm of the Department, is actively engaged in the promotion of Canadian trade and the protection of Canada's commercial interests; 67 offices are maintained in 48 countries.

Every effort is made by Trade Commissioners to bring Canadian exporters and prospective buyers together. On their own initiative, and in response to requests from the Department and Canadian business men, they study potential markets for specific Canadian commodities and services. Economic reports provide background information necessary to the formulation of Departmental trade policy. Reports are provided on the demand in the country concerned, prices, competition, trade and exchange regulations, tariffs, shipping and packaging requirements, credit terms, channels of distribution, labelling regulations, etc. Inquiries from local business men for goods obtainable from Canada are forwarded to the Department in Ottawa, or directly to Canadian firms in a position to supply the products required.

The supervision of Canadian exhibits at overseas trade fairs and the provision of assistance to participating Canadian firms is an important function of many offices. Trade commissioners make local arrangements for and travel with Canadian trade missions visiting overseas markets. They also seek sources of supply for a wide variety of goods on behalf of Canadian importers.

In developing trade opportunities, Canada's trade commissioners travel extensively in their territories, visit leading industrial and commercial centres and call on government officials, business men, trade associations and municipal authorities. They establish social contacts with commercial interests, thereby developing goodwill for Canada and Canadian

\* Prepared in the several branches and agencies concerned, and collated in the Trade Publicity Branch, Department of Trade and Commerce, Ottawa.

products, while creating connections for Canadian exporters and facilitating the collection of trade information. They return to Canada at periodic intervals and make tours of Canadian industrial and commercial centres. Such direct contacts enable them to discuss specific problems with business men and bring into focus the Canadian commercial scene.

In countries where Canada has a diplomatic mission, the Canadian trade office is the commercial division and the trade commissioner has the rank of Minister (Commercial), Minister-Counsellor (Economic), Commercial Counsellor, Commercial Secretary or Assistant Commercial Secretary. When attached to a consulate, he carries the title of Deputy Consul General (Commercial), Consul (Commercial), or Vice-Consul (Commercial), according to his rank, in addition to that of Trade Commissioner or Assistant Trade Commissioner. He may also be the Consul General, in charge of the office. Where trade offices are detached and do not form part of a diplomatic mission, the Trade Commissioner may also be required to undertake consular, immigration and other duties as the sole representative of Canada.

### CANADIAN FOREIGN TRADE OFFICES ABROAD, AS AT AUG. 25, 1966

- ARGENTINA.**—Commercial Counsellor, Canadian Embassy, Bartolome Mitre 478, Buenos Aires. Territory includes Paraguay.
- AUSTRALIA.**—  
 Sydney: Commercial Counsellor for Canada, P.O. Box 3952, A.M.P. Building, Circular Quay, Sydney. Territory includes States of New South Wales and Queensland, Capital Territory, Northern Territory, and Dependencies.  
 Melbourne: Commercial Counsellor for Canada, Mobil Centre, 2 City Road, Melbourne. Territory includes States of Victoria, South Australia, Western Australia and Tasmania.  
 Canberra: Commercial Counsellor, Office of the High Commissioner for Canada, Commonwealth Avenue, Canberra.
- AUSTRIA.**—Minister-Counsellor (Commercial), Canadian Embassy, P.O. Box 190, Vienna 1/8, Obere Donaustrasse 49/51, Vienna II. Territory includes Albania, Bulgaria, Czechoslovakia, Hungary, Romania and Yugoslavia.
- BELGIUM.**—Commercial Counsellor, Canadian Embassy, 35 rue de la Science, Brussels 4. Territory includes Luxembourg, European Economic Community, European Atomic Energy Community and European Coal and Steel Community.
- BRAZIL.**—  
 Rio de Janeiro: Commercial Counsellor, Canadian Embassy, Caixa Postal 2164-ZC-00, Edifício Metrópol, Av. Presidente Wilson 165, Rio de Janeiro.  
 São Paulo: Consul and Trade Commissioner, Canadian Consulate, Caixa Post 6034, Edifício Alois, Rua 7 de Abril 252, São Paulo.
- BRITAIN.**—  
 London: Minister (Commercial), Office of the High Commissioner for Canada, One Grosvenor Square, London W.1.  
 Liverpool: Canadian Government Trade Commissioner, Martins Bank Bldg., Water Street, Liverpool. Territory includes Midlands and North England.  
 Glasgow: Canadian Government Trade Commissioner, Cornhill House, 144 West George St., Glasgow C.2, Scotland. Territory includes Scotland.  
 Belfast: Canadian Government Trade Commissioner, 15-17 Chichester St., Belfast 1, Northern Ireland. Territory includes Northern Ireland.
- CEYLON.**—Commercial Division, Office of the High Commissioner for Canada, P.O. Box 1006, 6 Gregory's Road, Cinnamon Gardens, Colombo.
- CHILE.**—Commercial Counsellor, Canadian Embassy, Casilla 771, Agustinas 1225, Santiago.
- COLOMBIA.**—Commercial Secretary, Canadian Embassy, Apartado Aéreo 8582, Edifício Banco de los Andes, Carrera 10, No. 16-92, Bogotá. Territory includes Ecuador.
- CUBA.**—Commercial Division, Canadian Embassy, Gaveta 6125, Calle 30, No. 518 esquina 7ª Avenida, Miramar, Havana.
- DENMARK.**—Commercial Counsellor, Canadian Embassy, Prinsesse Maries Allé 2, Copenhagen V.
- DOMINICAN REPUBLIC.**—Commercial Secretary, Canadian Embassy, Apartado 1393, Edifício Copello 408, Calle El Conde, Santo Domingo. Territory includes Puerto Rico.
- FRANCE.**—Minister-Counsellor (Economic/Commercial), Canadian Embassy, 35 Ave. Montaigne, Paris 8°. Territory includes Algeria and Morocco.

## GERMANY.—

Bad Godesberg: Commercial Counsellor, Canadian Embassy, Kennedy-Allee 35, Bad Godesberg. Territory includes States of Baden-Wuerttemberg, Bavaria, Hesse, Rhineland-Palatinate and Saar and West Berlin.

Duesseldorf: Consul, Canadian Consulate General, Koenigsallee 82, 4 Duesseldorf 1. Territory includes State of North Rhine-Westphalia.

Hamburg: Consul General, Canadian Consulate General, Ferdinandstrasse 69, Hamburg. Territory includes City States of Bremen and Hamburg; States of Lower Saxony and Schleswig-Holstein.

GHANA.—Commercial Secretary, Office of the High Commissioner for Canada, P.O. Box 1639, E 115/3 Independence Ave., Accra. Territory includes Guinea, Ivory Coast, Liberia, Mali, Mauritania, Togo and Upper Volta.

GREECE.—Commercial Counsellor, Canadian Embassy, 31 Vassilissis Sophias Ave., Athens 138. Territory includes Turkey.

GUATEMALA.—Commercial Secretary, Canadian Embassy, P.O. Box 400, 5a Avenida 11-70, Zone 1, Guatemala City, C.A. Territory includes Costa Rica, El Salvador, Honduras, Nicaragua, Panama and Canal Zone.

HONG KONG.—Senior Canadian Government Trade Commissioner, P.O. Box 126, P & O Building, 21-23, Des Voeux Road, Central Hong Kong. Territory includes Cambodia, Communist China, Laos, Viet-Nam and Macao.

INDIA.—Commercial Counsellor for Canada, P.O. Box 11, 13 Golf Links Road, New Delhi 1. Territory includes Bhutan, Ceylon, Nepal and Sikkim.

IRAN.—Commercial Counsellor, Canadian Embassy, P.O. Box 1610, Bezrouke Bldg., Corner of Takht Jamshid Ave. and Forsat St., Tehran.

IRELAND.—Commercial Secretary for Canada, 66 Upper O'Connell St., Dublin.

ISRAEL.—Commercial Secretary, Canadian Embassy, P.O. Box 20140, 84 Hahashmonaim St., Tel Aviv.

## ITALY.—

Rome: Commercial Counsellor, Canadian Embassy, Via G.B. De Rossi 27. Territory includes Libya and Malta.

Milan: Consul General and Trade Commissioner, Canadian Consulate General, C.P. 3977, Via Pirelli 19. Territory includes Provinces of Emilia-Romagna, Lombardia, Piedimonte, Trentino-Alto Adige, Veneto, Liguria, Trieste, Valle D'Aosta and Friuli-Venezia.

JAMAICA.—Commercial Secretary, Office of the High Commissioner for Canada, P.O. Box 225, 32 Duke St. (corner Duke and Barry Sts.), Kingston. Territory includes Bahamas and British Honduras.

JAPAN.—Minister (Commercial), Canadian Embassy, c/o Akasaka Post Office 3-38, Akasaka, 7-Chome, Minato-ku, Tokyo. Territory includes Korea and Okinawa.

LEBANON.—Commercial Counsellor, Canadian Embassy, Botte Postale 2300, Alpha Building, Rue Clemenceau, Beirut. Territory includes Iraq, Jordan, Persian Gulf area, Saudi Arabia and Syria.

MALAYSIA.—Commercial Counsellor, Office of the High Commissioner for Canada, P.O. Box 990, A.I.A. Building, Ampang Road, Kuala Lumpur. Territory includes Brunei and Burma.

MEXICO.—Commercial Counsellor, Canadian Embassy, Apartado Postal 5-364, Melchor Ocampo 463, Mexico 5, D.F.

NETHERLANDS.—Commercial Counsellor, Canadian Embassy, Sophialaan 5-7, The Hague.

NEW ZEALAND.—Commercial Counsellor, Office of the High Commissioner for Canada, P.O. Box 12-049, ICI Building, Molesworth Street, Wellington. Territory includes Fiji, Tahiti, Tonga and Western Samoa.

NIGERIA.—Commercial Secretary, Office of the High Commissioner for Canada, P.O. Box 851, Barclays Bank Building, 40 Marina Rd., Lagos. Territory includes Dahomey, Gambia, Niger, Senegal and Sierra Leone.

NORWAY.—Commercial Counsellor, Canadian Embassy, Fridtjof Nansens plass 5, Oslo 1. Territory includes Iceland.

## PAKISTAN.—

Rawalpindi: Commercial Secretary, Office of the High Commissioner for Canada, 17A Harley St. Annex. Territory includes Afghanistan.

Karachi: Commercial Secretary for Canada, P.O. Box 3703, Hotel Metropole, Victoria Rd.

PERU.—Commercial Secretary, Canadian Embassy, Casilla 1212, Edificio El Pacifico, Corner Avenida Arequipa and Plaza Washington, Lima. Territory includes Bolivia.

PHILIPPINES.—Consul General and Trade Commissioner, Canadian Consulate General, P.O. Box 1825, L & S Building, 1414 Roxas Boulevard, Manila. Territory includes Republic of China (Taiwan).



- PORTUGAL.**—Commercial Counsellor, Canadian Embassy, Rua Marques de Fronteira, No. 8-4°D°, Lisbon. Territory includes Angola, Azores, Cape Verde Islands, Madeira and Portuguese Guinea.
- SINGAPORE.**—Commercial Counsellor, Office of the High Commissioner for Canada, P.O. Box 845, American International Building, Robinson Road and Telegraph St. Territory includes Indonesia and Thailand.
- SOUTH AFRICA.**—  
**Johannesburg:** Canadian Government Trade Commissioner, P.O. Box 715, Mobil House, Corner Rissik and De Villiers Sts., Johannesburg. Territory includes States of Natal, Orange Free State and Transvaal, and Angola, Botswana, Lesotho, Malagasy, Mauritius, Mozambique and Reunion.  
**Cape Town:** Canadian Government Trade Commissioner, P.O. Box 683, African Life Centre, St. George's St. Territory includes Cape Province, and St. Helena and South West Africa.
- SPAIN.**—Commercial Counsellor, Canadian Embassy, Edificio España, Avenida de Jose Antonio 88, Madrid. Territory includes Balearic Islands, Canary Islands, Gibraltar, Rio Muni and Spanish Sahara.
- SWEDEN.**—Commercial Counsellor, Canadian Embassy, P.O. Box 14042, Skeppsbron 24, Stockholm. Territory includes Finland.
- SWITZERLAND.**—Commercial Counsellor, Canadian Embassy, Kirchenfeldstrasse 88, Berne. Territory includes Tunisia.
- TRINIDAD AND TOBAGO.**—Commercial Counsellor, Office of the High Commissioner for Canada, P.O. Box 1246, Colonial Bldg., 72 South Quay, Port-of-Spain. Territory includes Barbados, Leeward and Windward Islands, Guyana, French Guiana, Surinam, Guadeloupe and Martinique.
- UNION OF SOVIET SOCIALIST REPUBLICS.**—Commercial Secretary, Canadian Embassy, 23 Starokon-yushenny Pereulok, Moscow.
- UNITED ARAB REPUBLIC.**—Commercial Division, Canadian Embassy, Kasr el Doubara Post Office, 6 Sharia Rouston Pasha, Garden City, Cairo. Territory includes Sudan and Ethiopia.
- UNITED STATES.**—  
**Washington:** Commercial Counsellor, Canadian Embassy, 1746 Massachusetts Ave., N.W., Washington, D.C. 20036. Territory includes District of Columbia.  
**New York City:** Deputy Consul General (Commercial), Canadian Consulate General, 680 Fifth Ave., New York, N. Y. 10019. Territory includes States of Connecticut, New Jersey (eleven northern counties) and New York, and Bermuda.  
**Boston:** Consul and Senior Trade Commissioner, Canadian Consulate General, 500 Boylston St., Boston, Mass. 02116. Territory includes States of Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.  
**Chicago:** Consul and Senior Trade Commissioner, Canadian Consulate General, 310 South Michigan Ave., Chicago, Ill. 60604. Territory includes States of Illinois, North Dakota, South Dakota, Minnesota, Wisconsin, Indiana, Iowa, Kansas, Kentucky, Missouri and Nebraska.  
**Cleveland:** Consul and Senior Trade Commissioner, Canadian Consulate, Illuminating Building, 55 Public Square, Cleveland, Ohio 44113. Territory includes State of Ohio.  
**Detroit:** Consul and Trade Commissioner, Canadian Consulate, 1139 Penobscot Building, Detroit, Mich. 48226. Territory includes State of Michigan.  
**Los Angeles:** Consul and Senior Trade Commissioner, Canadian Consulate General, 510 West Sixth St., Los Angeles, Cal. 90014. Territory includes States of California (ten southern counties), Arizona and New Mexico and Clark County in Nevada.  
**New Orleans:** Consul and Trade Commissioner, Canadian Consulate General, 225 Baronne St., New Orleans, La. 70112. Territory includes States of Louisiana, Texas, Oklahoma, Arkansas, Mississippi, Tennessee, Alabama, North Carolina, South Carolina, Georgia and Florida.  
**Philadelphia:** Consul and Trade Commissioner, Canadian Consulate, 3 Penn Center Plaza, Philadelphia, Pa. 19102. Territory includes States of Delaware, Maryland, New Jersey (nine southern counties), Pennsylvania, Virginia and West Virginia.  
**San Francisco:** Consul and Trade Commissioner, Canadian Consulate General, 333 Montgomery St., San Francisco, Cal. 94104. Territory includes States of California (except the ten southern counties), Wyoming, Nevada (except Clark County), Utah, Colorado and Hawaii.  
**Seattle:** Consul General, Canadian Consulate General, 1308 Tower Building, Seventh Avenue at Olive Way, Seattle, Wash. 98101. Territory includes States of Oregon, Idaho, Washington, Montana and Alaska.
- URUGUAY.**—Commercial Counsellor, Canadian Embassy, Casilla Postal 852, No. 1409 Avenida Agraciada Piso 7°, Montevideo. Territory includes Falkland Islands.
- VENEZUELA.**—Commercial Secretary, Canadian Embassy, Apartado del Este 11452, Avenida La Estancia No. 10, Ciudad Comercial Tamanaco, Caracas. Territory includes Netherlands Antilles.

**Trade Fairs and Missions Branch.**—It is the function of this Branch to organize and co-ordinate the Department's annual program of participation in trade fairs abroad and of outgoing and incoming trade missions. The Trade Fairs Abroad Division and the Trade Missions Division co-ordinate departmental activity in implementing these promotion programs and in organizing the trade fair exhibits and trade missions scheduled during the year. The Branch Director acts as chairman of the Departmental committees that select the program and the Division Chiefs preside over working committees appointed to handle detailed planning. The Branch also provides liaison with Trade Commissioner Service posts abroad, trade associations in Canada, provincial governments and other federal departments or agencies in the development of trade promotion programs.

In 1966 the Department of Trade and Commerce sponsored exhibits in 45 trade fairs abroad in such key markets as the United States, England, West Germany, France, Russia, Yugoslavia, Spain, Italy and Scotland. The products of hundreds of Canadian manufacturers were exhibited to potential foreign buyers numbering more than 15,000,000. The 26 trade missions organized in 1966 included 10 teams of Canadian business men sent abroad to study special markets in Europe, the United States, Latin America, Australia, New Zealand, Southeast Asia and the Mediterranean. Sixteen groups of business visitors were brought to Canada from Europe, Australia, the United States, Latin America, Japan and Malaysia.

**Trade Policy Service.**—The Office of Trade Relations and the Office of Commodity Trade Policy, established in September 1966, forms the Department's Trade Policy Service.

The main function of the Office of Trade Relations is to safeguard and improve terms of access for Canadian exporters in foreign markets. The Office is concerned with the conduct of Canadian trade relations with other countries, including the negotiation and administration of trade agreements and Canadian participation in international conferences and meetings dealing with trade and economic matters. It endeavours to find practical solutions for tariff problems and other difficulties encountered in foreign markets by Canadian exporters and, as a service to exporters, provides expert information, advice and assistance on foreign tariffs, import and exchange controls, documentation requirements and other foreign governmental regulations affecting Canada's trade. The Office also has responsibilities in relation to the export financing facilities available for the development of exports of Canadian capital equipment. The Area Divisions of the Office—Commonwealth, United States, European, Latin American and Asia and Middle East—are the central points of contact between Canada's trade commissioners abroad and the Department in Ottawa.

The Office of Commodity Trade Policy has two main areas of interest: it makes detailed commodity studies to ensure that the development of Canadian trade and related policies reflects the key role of export in economy, and it has the responsibility for international commodity policy work, including the negotiation of international commodity arrangements and related activities.

**Transportation and Trade Services Branch.**—The functions of this Branch relate to freight transportation matters, export and import controls, trade directories, the administration of the six Regional Offices and the provision of general guidance to firms seeking entry into the export field. These activities are conducted by three Divisions: the Transportation Division is concerned primarily with industrial transportation from the export shipper's point of view, with policies and practices affecting the movement of international trade, and with developments and trends in shipping services and freight rates; the Export and Import Permits Division administers the controls established under the Export and Import Permits Act; and the Regional Offices and Trade Services Division administers the Department's Regional Offices and compiles the Exporters' Directory, a confidential directory of firms engaged in or seriously interested in exporting commodities or services.



**Commodity Branches.**—The Commodities and Industries Services include three commodity branches—the Agriculture and Fisheries Branch, the Industrial Materials Branch and the Manufacturing Industries and Engineering Branch. These branches provide the main link between industry and the Department; they maintain close contact with the business community to be familiar with production and supply conditions in Canada. Emphasis is placed on the search for products and services, the sale of which can be promoted abroad.

The Agriculture and Fisheries Branch is organized into five divisions to cover fisheries, grain, livestock and animal products, plant products, and commodity arrangements and markets development. The Industrial Materials Branch is composed of three divisions to handle chemicals, forest products and metals and minerals. The Manufacturing Industries and Engineering Branch is organized into four divisions responsible for appliances and commercial machinery, electrical and electronic equipment, mechanical equipment and engineering, and textiles and consumer goods. These divisions are staffed by commodity officers who are specialists in their fields and are available to assist Canadian business men.

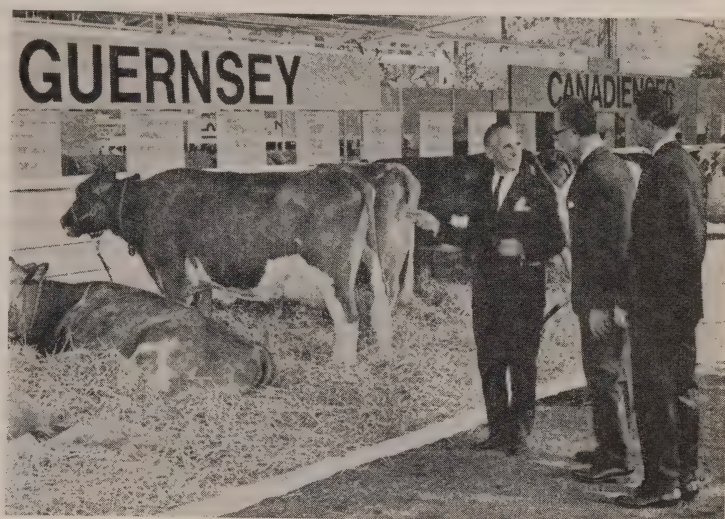
Commodity officers visit manufacturing plants and production facilities, attend and address meetings of business associations and study groups and prepare product reports and market surveys. They constitute the principal channel through which information on Canadian products and services reaches Canadian Trade Commissioners abroad and a channel through which information on sales opportunities in countries abroad is disseminated to industry in Canada. They continually analyse reports from Trade Commissioners abroad to determine potential markets for commodities and services of interest to Canadian industry. In co-operation with the Canadian Government Exhibition Commission, they assist in making arrangements for the display of commodities in trade fairs throughout the world to introduce Canadian products into new markets. They organize and accompany departmental trade missions and serve as delegates to international commodity conferences to study world market conditions and to consider corrective adjustments.

**Trade Publicity Branch.**—The function of the Trade Publicity Branch is to stimulate interest in Canadian products in foreign markets and to encourage Canadian manufacturers to look beyond domestic horizons. Advertising, public relations and publicity techniques are used in varying combinations to accomplish these objectives. Advertising, periodicals, booklets, brochures and other printed matter are used in direct support of trade fairs and missions; news releases, radio tape recordings and television film clips are employed to inform Canadians of foreign trade opportunities and successes.

The Branch is composed of an Operations Group and five Divisions. The Operations Group plans and executes the major activities concerning trade fairs and in-store promotions. Working closely with that Group is the Editorial Division which employs writers and editors, and the Art Division which is responsible for design, production and technical work. The Media Relations Division prepares and distributes press releases, articles, photographs, speeches and background material to newspapers, radio and television stations, magazines and the Canadian trade press. It provides publicity material for distribution abroad and produces and distributes films and television clips to promote interest in Canada as a supplier of many commodities. The Canada Courier Division produces *Canada Courier*, an illustrated, eight-page international trade promotion newspaper, published on behalf of Canadian exporters to promote products and services abroad. It has a circulation of 97,000 and is distributed in more than 100 countries. The English edition is published six times a year and the French, Spanish and German editions twice annually. The Foreign Trade Division publishes the magazine *Foreign Trade*, fortnightly, and *Commerce extérieur*, monthly. These journals, designed to help Canadian exporters, contain information on overseas markets, tariffs, exchange rates and other pertinent trade data.



**Canadian Government Exhibition Commission.**—The Commission organizes, designs, produces and administers all Canadian exhibits at fairs and exhibitions abroad in which the Canadian Government participates and also advises private exhibitors and their agents on the best means of displaying Canadian products at trade fairs. It acts as a central service agency for all government departments and agencies in the preparation of conventional exhibits and displays for showing in Canada and is responsible for international fairs and exhibitions held in Canada that are financed and sponsored by the Government of Canada.



Canadian purebred dairy cows received considerable attention at two Mexican livestock shows held late in 1966. The exhibit was sponsored by the Department of Trade and Commerce for the purpose of promoting exports and followed similar exhibits in France and Yugoslavia.

**Canadian Government Travel Bureau.**—The Canadian Government Travel Bureau is in operation to encourage tourist travel to Canada and to co-ordinate the tourist promotion conducted by the provinces, transportation companies and national, regional and local tourist associations. The Bureau undertakes extensive tourist advertising campaigns abroad, provides tourist publicity material for foreign newspapers, magazines, radio and television outlets, and annually handles about 1,500,000 inquiries from potential visitors to Canada. Tourist offices are operated in New York, Chicago, San Francisco, Minneapolis, Los Angeles, Boston, Philadelphia, Cincinnati, Rochester, Indianapolis, Cleveland, Detroit and Seattle in the United States; the Bureau also has representation in London, Paris, Frankfurt, Amsterdam, Mexico City, Tokyo and Sydney, Australia.

**Export Credits Insurance Corporation.**—This Corporation was established under the provisions of the Export Credits Insurance Act, 1944 (RSC 1952, c. 105, as amended) and is administered by a Board of Directors that includes the Deputy Minister of Trade and Commerce and the Deputy Minister of Finance. It operates in two fields—export credits insurance and long-term export financing.

Insurance is available to all persons or corporations carrying on business in Canada to cover export sales made on customary credit terms. It provides protection against risks involved in the export, manufacture, treatment or distribution of goods, or the rendering of engineering, construction, technical or similar services. The main risks covered include: insolvency or protracted default on the part of the buyer; exchange restrictions in the

buyer's country preventing the transfer of funds to Canada; cancellation of an import licence or an export licence or the imposition of restrictions on the import or export of goods not previously subject to restrictions; the occurrence of war between the buyer's country and Canada, or of war, revolution, etc., in the buyer's country. The insurance is available under three main classifications—general commodities, capital goods and services. General commodities policies cover a policyholder's export sales to all countries except the United States for a period of one year, and are renewable. Two types are available: the contracts policy, which insures an exporter against loss from the time he books an order until payment is received; or the shipments policy, obtainable at lower rates of premium and covering the exporter from the time of shipment until payment is received. Insurance of capital goods offers protection to exporters dealing in plant equipment, heavy machinery, etc., where extended credit up to a maximum of five years may be necessary. Specific policies are issued for transactions involving capital goods but the general terms and conditions are the same as those applicable to policies for general commodities. Specific policies are also issued to cover engineering, construction, technical or similar service contracts entered into between Canadian firms and persons in foreign countries who have agreed to purchase such services. The Corporation may also extend unconditional guarantees to Canadian chartered banks which will agree to provide non-recourse financing to insured exporters who have sold capital equipment abroad on medium-term credit.

The Corporation insures exporters on a co-insurance basis, the exporter retaining a small percentage of the risk involved, and the same principle operates in the distribution of recoveries obtained after the payment of a claim. When, in the opinion of the Minister of Trade and Commerce, a proposed transaction is in the national interest but would impose upon the Corporation a liability for a term or in an amount in excess of that normally undertaken, the Corporation may be authorized by the Governor in Council to enter into a contract of insurance at the Government's risk.

The Corporation also administers direct financing facilities available under the Act in cases where export sales involving capital goods are of such a nature as to warrant credit terms in excess of five years. The Corporation, when authorized by the Governor in Council, buys the promissory notes or other negotiable instruments of the foreign purchaser.

## Section 2.—The Development of Tariffs

Limitations of space in the Year Book have made it necessary, in regard to tariffs, to adopt the policy of confining any detail regarding commodities and countries to tariff relationships in force at present and to summarize as much as possible historical data and details of preceding tariffs.

### Subsection 1.—The Canadian Tariff Structure\*

The Canadian Tariff consists, in the main, of three sets of tariff rates—British Preferential, Most-Favoured-Nation, and General.

*British Preferential Tariff* rates are, with some exceptions, the lowest rates. They are applied to imported commodities from British countries, with the exception of Hong Kong, when conveyed without trans-shipment from a port of any British country enjoying the benefits of the British Preferential Tariff into a port of Canada. Some Commonwealth countries have trade agreements with Canada which provide for rates of duty, on certain specified goods, lower than the British Preferential rates.

\* Information relating to rate of duty and value for duty is available from the Department of National Revenue, Customs and Excise Division, which administers the Customs Act and the Customs Tariff.



*Most-Favoured-Nation* rates are usually higher than the British Preferential rates and lower than the General Tariff rates. They are applied to commodities imported from countries with which Canada has trade agreements. These rates would apply to British countries when they are lower than the British Preferential Tariff rates. The most important trade agreement concerning the effective rates applied to goods imported from countries entitled to Most-Favoured-Nation rates is the General Agreement on Tariffs and Trade (GATT).

*General Tariff* rates are applied to goods imported from the few countries with which Canada has not made trade agreements.

There are numerous goods which are duty free under the British Preferential Tariff, or under both the British Preferential and Most-Favoured-Nation Tariffs, or under all Tariffs.

*Valuation.*—In general, the Customs Act provides that the value for duty of imported goods shall be the fair market value of like goods as established in the home market of the exporter at the time when and place from which the goods are shipped directly to Canada when sold “(a) to purchasers located at that place with whom the vendor deals at arm’s length and who are at the same or substantially the same trade level as the importer, and (b) in the same or substantially the same quantities for home consumption in the ordinary course of trade under competitive conditions”. In cases where like goods are not sold for home consumption but similar goods are sold, the value for duty shall be the cost of production of the goods imported plus an amount for gross profit equal in percentage to that earned on the sale of similar goods in the country of export. The value for duty ordinarily may not be less than the amount for which the goods were sold to the purchaser in Canada, exclusive of all charges thereon after their shipment from the country of export. Internal taxes in the country of export (when not incurred on exported goods), the cost of shipping goods to Canada and similar charges do not normally form part of the value for duty. There are, of course, further provisions for determining value for duty under the Act.

*Dumping.*—Sect. 6 of the Customs Tariff provides that when the actual selling price of goods being imported is less than the fair market value and the goods are of a class or kind made or produced in Canada, a special or dumping duty shall be collected. This duty is to be equal to the difference between the actual selling price and the fair market value of the goods, except that it may not be more than 50 p.c. ad valorem. These provisions are designed to offset the advantage foreign exporters may achieve by exporting to Canada at less than the going prices in the country of export.

*Drawback.*—There are provisions in the Customs and Excise Tax Acts for the repayment of a portion of the duty, sales and/or excise taxes paid on imported goods used in the manufacture of products later exported. The purpose of these drawbacks (as these repayments are called) is to assist Canadian manufacturers to compete in foreign markets with foreign producers of similar goods. A second class of drawback, known as “home consumption” drawbacks, is provided for under the Customs Act and the Customs Tariff Act and applies to imported materials and/or parts used in the production of specified goods to be consumed in Canada.

**The Tariff Board.**—The organization and functions of the Tariff Board are described at p. 140 of this volume.

### **Subsection 2.—Tariff and Trade Arrangements with Other Countries as at Sept. 15, 1966**

Canada’s tariff arrangements with other countries fall into three main categories: trade agreements with a number of Commonwealth countries; the General Agreement on Tariffs and Trade (GATT); and other agreements and arrangements.



The Commonwealth countries with which Canada has trade agreements providing for exchange of preferential rates are: Australia, Bahamas, Barbados, Bermuda, Guyana, British Honduras, Jamaica, the Leeward and Windward Islands, Trinidad and Tobago, New Zealand, Britain and its dependent territories and the members of the former Federation of Rhodesia and Nyasaland (Malawi, Rhodesia and Zambia). Canada also exchanges preferences with Ceylon, Cyprus, Malaysia, Malta and Sierra Leone and accords preferences to India, Pakistan, Ghana, Nigeria, Kenya, Tanzania and Uganda. Many of these countries are also members of the GATT. In addition, Canada has trade agreements with Ireland and South Africa under which preferences are exchanged.

Canada signed the Protocol of Provisional Application of the General Agreement on Tariffs and Trade on Oct. 30, 1947, and brought the General Agreement into force on Jan. 1, 1948. The Agreement provides for scheduled tariff concessions and the exchange of most-favoured-nation treatment among the contracting parties, and lays down rules and regulations to govern the conduct of international trade.

At the beginning of September 1966, there were 70 full members in the GATT. These countries and the effective dates of their accession are indicated in the following list. In addition, Argentina, Iceland, Tunisia and the United Arab Republic were provisional members. The GATT is applied on a *de facto* basis to a number of newly independent states—Algeria, Democratic Republic of Congo, Maldive Islands, Mali, Singapore and Zambia—pending decisions as to their future commercial policies; Cambodia and Poland, although not members, participate in the work of GATT.

Trade relations between Canada and a number of other countries are governed by trade agreements of various kinds, by exchange of most-favoured-nation treatment under Orders in Council, by continuation to newly independent states of the same treatment originally negotiated with the countries previously responsible for their commercial relations, and by even less formal arrangements.

#### Tariff and Trade Arrangements with Commonwealth Countries as at Sept. 15, 1966

Country	Agreement	Tariff Treatment
AUSTRALIA.....	Trade Agreement signed Feb. 12, 1960; in force June 30, 1960. GATT effective Jan. 1, 1948.	Agreement includes schedules of tariff rates and margins and exchange of British preferential rates on items not scheduled. May be terminated on six months notice.
BRITAIN.....	Trade Agreement signed Feb. 23, 1937, effective Sept. 1, 1937; modified by exchanges of letters Nov. 16, 1938 and Oct. 20, 1947. GATT effective Jan. 1, 1948.	Various concessions are granted by each country including exchange of preferential tariff rates. The Agreement (as modified) includes provisions relating to the Colonies, Dependencies and Trusteeships.
CEYLON.....	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective July 29, 1948.	Canada and Ceylon exchange preferential tariff treatment.
COMMONWEALTH CARIBBEAN (BAHAMAS, BARBADOS, BERMUDA, BRITISH HONDURAS, AND THE LEEWARD ISLANDS, AND THE WINDWARD ISLANDS).	Canada-British West Indies Trade Agreement signed July 6, 1925, in force Apr. 30, 1927; Canadian notice of termination of Nov. 23, 1938, was replaced by notice of Dec. 27, 1939, which continued the Agreement. Protocol signed July 8, 1966 continues <i>ad interim</i> and amends Part I of the Canada-British West Indies Trade Agreement; terminates Part II of that Agreement and incorporates a number of additional provisions. Barbados, Bermuda, British Honduras and the Leeward and the Windward Islands participate in GATT.	The parties exchange specified tariff preferences.

**Tariff and Trade Arrangements With Commonwealth Countries  
as at Sept. 15, 1966—continued**

Country	Agreement	Tariff Treatment
CYPRUS.....	GATT effective Aug. 16, 1960.	Canada exchanges preferential tariff treatment with Cyprus.
GAMBIA.....	GATT effective Feb. 18, 1965.	Canada and Gambia exchange preferential tariff treatment.
GHANA.....	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Oct. 18, 1957.	Canada accords British preferential treatment to Ghana, (except on cocoa beans). Ghana extends most-favoured-nation treatment to Canada.
GUYANA.....	Relations are based on the Canada-West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean).	The parties exchange specified tariff preferences.
INDIA.....	Since 1957 Canada has unilaterally accorded British preferential treatment without contractual obligation. GATT effective July 8, 1948.	Canada accords British preferential treatment to India. India extends most-favoured-nation treatment to Canada.
JAMAICA.....	Relations are based on Canada-West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective Aug. 6, 1962.	The parties exchange specified tariff preferences.
KENYA.....	GATT effective Dec. 12, 1963.	Canada accords British preferential tariff treatment to Kenya. Kenya extends most-favoured-nation treatment to Canada.
MALAWI.....	Malawi and Canada observe the terms of the 1953 Trade Agreement between Canada and the former Federation of Rhodesia and Nyasaland.	Canada exchanges preferential tariff treatment with Malawi.
MALAYSIA.....	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Sept. 18, 1963.	Canada and Malaysia exchange preferential tariff treatment.
MALTA.....	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Sept. 16, 1964.	Canada exchanges British preferential treatment with Malta.
NEW ZEALAND.....	Trade Agreement signed Apr. 23, 1932; in force May 24, 1932. GATT effective July 26, 1948.	The parties exchange specific preferences on scheduled goods and reciprocally grant British preferential rates on items not scheduled. May be terminated on six months notice.
NIGERIA, FEDERATION OF.....	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Oct. 1, 1960.	Canada accords British preferential treatment to Nigeria. Nigeria extends most-favoured-nation treatment to Canada.
PAKISTAN.....	Canada unilaterally accords British preferential treatment without contractual obligation. GATT effective July 30, 1948.	Canada accords British preferential treatment to Pakistan.  Exchange of most-favoured-nation treatment.
RHODESIA.....	Canada does not recognize the present Government of Rhodesia.	Effective Nov. 11, 1965, Canada withdrew preferential treatment from Rhodesian goods, making them liable to the general tariff rate.  Effective Dec. 31, 1965, Rhodesia withdrew preferential treatment from Canadian goods and required that they pay the most-favoured-nation rate.

**Tariff and Trade Arrangements with Commonwealth Countries  
as at Sept. 15, 1966—concluded**

Country	Agreement	Tariff Treatment
SIERRA LEONE.....	GATT effective Apr. 27, 1961.	Exchange of most-favoured-nation treatment. Canada accords British preferential treatment to Sierra Leone. Sierra Leone extends most-favoured-nation tariff treatment to Canada.
SINGAPORE.....	GATT effective <i>de facto</i> Aug. 9, 1965, pending Singapore's decision on commercial policy. GATT effective Aug. 31, 1962.	Canada and Singapore exchange preferential treatment.
TRINIDAD AND TOBAGO.....	Relations are based on Canada-West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective Aug. 31, 1962.	The parties exchange specified tariff preferences.
UGANDA.....	GATT effective Oct. 9, 1962.	Canada accords British preferential tariff treatment to Uganda. Uganda extends most-favoured-nation tariff treatment to Canada.
UNITED REPUBLIC OF TANZANIA.	GATT effective for Tanganyika Dec. 9, 1961 and extended to Zanzibar upon formation of United Republic Apr. 23, 1964.	Canada accords British preferential tariff treatment to the United Republic of Tanzania. Tanzania extends most-favoured-nation tariff treatment to Canada.
ZAMBIA.....	GATT has <i>de facto</i> application for Zambia for a two-year period effective Oct. 24, 1964.	Exchange of most-favoured-nation treatment. Canada accords British preferential treatment to Zambia. Zambia extends most-favoured-nation tariff treatment to Canada.

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at  
Sept. 15, 1966**

Country	Agreement	Tariff Treatment
ALGERIA.....	Franco-Canadian Trade Agreement of 1933 applied to Algeria. Algeria maintains a <i>de facto</i> application of the GATT.	Since the creation of Algeria as an independent state in 1962, Canada has continued to grant most-favoured-nation treatment.
ARGENTINA.....	Trade Agreement signed Oct. 2, 1941; provisionally in force Nov. 15, 1941. Argentina has acceded to GATT provisionally.	Exchange of most-favoured-nation treatment. Provisional application may be terminated on three months notice.
AUSTRIA.....	GATT effective Oct. 19, 1951.	Exchange of most-favoured-nation treatment.
BELGIUM-LUXEMBOURG. ....	Convention of Commerce with Belgium-Luxembourg Economic Union (including Belgian colonies) entered into effect Oct. 22, 1924. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
BENELUX (BELGIUM-NETHERLANDS-LUXEMBOURG CUSTOMS UNION).	(See Belgium-Luxembourg and Netherlands.)	



**Tariff and Trade Arrangements with Non-Commonwealth Countries as at  
Sept. 15, 1966—continued**

Country	Agreement	Tariff Treatment
BOLIVIA.....	Order in Council of July 20, 1935, accepted Article 15 of U.K.-Bolivia Treaty of Commerce of Aug. 1, 1911.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
BRAZIL.....	Trade Agreement signed Oct. 17, 1941; provisionally in force from date of signing and definitively on Apr. 16, 1943. GATT effective July 31, 1948.	Exchange of most-favoured-nation treatment.
BULGARIA.....	Trade Agreement signed Oct. 8, 1963; provisionally in force from date of signing.	Exchange of most-favoured-nation treatment and undertaking by Bulgaria to purchase a minimum of 300,000 metric tons of wheat or equivalent in flour during the three years validity of the Agreement.
BURMA.....	GATT effective July 29, 1948.	Exchange of most-favoured-nation treatment.
BURUNDI.....	GATT effective July 1, 1962.	Canada grants most-favoured-nation treatment.
CAMBODIA.....	Franco-Canadian Trade Agreement of 1933 applied to Cambodia. Although not a full member, Cambodia takes part in the work of GATT under a special arrangement.	Since the creation of Cambodia as an independent state in 1955, Canada has continued to grant most-favoured-nation treatment.
CAMEROON.....	Franco-Canadian Trade Agreement of 1933 applied to Cameroon. GATT effective Nov. 28, 1960.	Exchange of most-favoured-nation treatment.
CENTRAL AFRICAN REPUBLIC...	Franco-Canadian Trade Agreement of 1933 applied to Central African Republic. GATT effective Aug. 14, 1960.	Exchange of most-favoured-nation treatment.
CHAD.....	Franco-Canadian Trade Agreement of 1933 applied to Chad. GATT effective Aug. 11, 1960.	Exchange of most-favoured-nation treatment.
CHILE.....	Trade Agreement signed Sept. 10, 1941; provisionally in force Oct. 15, 1941, and definitively on Oct. 29, 1943. GATT effective Mar. 16, 1948.	Exchange of most-favoured-nation treatment.
CHINA.....	<i>Modus vivendi</i> signed Sept. 26, 1946. Covers the territory of China and Taiwan.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
COLOMBIA.....	Treaty of Commerce with Britain of Feb. 16, 1866, applies to Canada. Modified by protocol of Aug. 20, 1912, and exchange of notes Dec. 30, 1938.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
CONGO (BRAZZAVILLE).....	Franco-Canadian Trade Agreement of 1933 applies to Congo (Brazzaville). GATT effective Aug. 15, 1960.	Exchange of most-favoured-nation treatment.
CONGO (LEOPOLDVILLE).....	Belgo-Canadian Convention of Commerce of 1924 applied to Congo (Leopoldville). Maintains a <i>de facto</i> application of the GATT.	Since the Congo's independence in 1960, Canada has continued to grant most-favoured-nation treatment.
COSTA RICA.....	<i>Modus vivendi</i> signed Nov. 18, 1950; brought into force Jan. 26, 1951.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
CUBA.....	GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment.

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at  
Sept. 15, 1966—continued**

Country	Agreement	Tariff Treatment
CZECHOSLOVAKIA.....	Convention of Commerce signed Mar. 15, 1928; in force Nov. 14, 1928. GATT effective May 21, 1948.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
DAHOMEY.....	Franco-Canadian Trade Agreement of 1933 applied to Dahomey. GATT effective Aug. 1, 1960.	Exchange of most-favoured-nation treatment.
DENMARK (INCLUDING GREENLAND).	Treaties of Peace and Commerce with Britain of Feb. 13, 1660 and July 11, 1670, apply to Canada. GATT effective May 28, 1950.	Exchange of most-favoured-nation treatment. Declaration of May 9, 1912 provides means for separate termination by Dominions on one years notice.
DOMINICAN REPUBLIC.....	Trade Agreement signed Mar. 8, 1940; in force Jan. 22, 1941. GATT effective May 19, 1950.	Exchange of most-favoured-nation treatment including scheduled concessions.
ECUADOR.....	<i>Modus vivendi</i> signed Nov. 10, 1950; in force Dec. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
EGYPT.....	(See United Arab Republic.)	
EL SALVADOR.....	Exchange of notes of Nov. 2, 1937; in force Nov. 17, 1937.	Exchange of most-favoured-nation treatment. May be terminated on four months notice.
ETHIOPIA.....	Exchange of notes effective June 3, 1955.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
FINLAND.....	Exchange of notes of Nov. 13-17, 1948; effective Nov. 17, 1948. GATT effective May 25, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
FRANCE AND FRENCH OVERSEAS TERRITORIES.	Trade Agreement signed May 12, 1933; in force June 10, 1933. Exchange of notes of Sept. 29, 1934, and additional protocol of Feb. 26, 1935. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment including scheduled concessions. May be terminated on three months notice.
GABON.....	Franco-Canadian Trade Agreement of 1933 applied to Gabon. GATT effective Aug. 17, 1960.	Exchange of most-favoured-nation treatment.
GERMANY, FEDERAL REPUBLIC OF.	GATT effective Oct. 1, 1951.	Exchange of most-favoured-nation treatment.
GREECE.....	<i>Modus vivendi</i> by exchange of notes of July 24-28, 1947. GATT effective Mar. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
GREENLAND.....	(See Denmark.)	
GUATEMALA.....	Trade Agreement signed Sept. 28, 1937; in force Jan. 14, 1939.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
GUINEA.....	Franco-Canadian Trade Agreement of 1933 applied to Guinea.	Since the creation of Guinea as an independent state in 1958, Canada has continued to grant most-favoured-nation treatment.
HAITI.....	Trade Agreement signed Apr. 23, 1937; in force Jan. 10, 1939. GATT effective Jan. 1, 1950.	Exchange of most-favoured-nation treatment.
HONDURAS.....	Exchange of Notes signed July 11, 1956, effective July 18, 1956. Ratified in Honduras Sept. 5, 1956.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at  
Sept. 15, 1966—continued**

Country	Agreement	Tariff Treatment
HUNGARY.....	Trade Agreement signed June 11, 1964; provisionally in force from date of signing.	Exchange of most-favoured-nation treatment and undertaking by Hungary to purchase a minimum of \$24,000,000 of wheat and other unspecified products during the three years validity of the Agreement. Hungary is committed to purchase 250,000 metric tons of wheat.
ICELAND.....	Although there is no contractual obligation, Canada and Iceland adhere to the terms of a treaty originally concluded between Denmark and Britain on Feb. 13, 1960. Iceland has acceded to GATT provisionally.	Exchange of most-favoured-nation treatment.
INDONESIA.....	GATT effective Mar. 1, 1948.	Exchange of most-favoured-nation treatment.
IRAN.....	Special arrangement by Order in Council effective Feb. 1, 1951. Iran accorded most-favoured-nation treatment from Sept. 5, 1956.	Canada grants most-favoured-nation tariff rates as long as Iran accords reciprocal treatment.
IRAQ.....	Special arrangement by Order in Council effective Sept. 15, 1951.	Exchange of most-favoured-nation tariff treatment.
IRELAND.....	Trade Agreement signed Aug. 20, 1932; in force Jan. 2, 1933. Trade Agreement is at present under review in the light of Anglo-Irish Free Trade Agreement effective July 1, 1966.	Canada grants British preferential tariff in return for preferential rates where such exist and for most-favoured-nation rates on non-preferential items. May be terminated on six months notice.
ISRAEL.....	Canada-U.K. Agreement of 1937 continued to apply to the State of Israel after its foundation in May 1948. GATT effective July 5, 1962.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
ITALY.....	<i>Modus vivendi</i> by exchange of notes of Apr. 23-28, 1948; effective Apr. 28, 1948. GATT effective Jan. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
IVORY COAST.....	Franco-Canadian Trade Agreement of 1933 applied to the Ivory Coast. GATT effective Aug. 7, 1960.	Exchange of most-favoured-nation treatment.
JAPAN.....	Agreement on Commerce signed Mar. 31, 1954; effective June 7, 1954. GATT effective Sept. 10, 1955.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
KUWAIT.....	Canada-U.K. Agreement of 1937 applied to Kuwait as a British Protectorate. GATT effective June 18, 1961.	Since independence of Kuwait in June 1961, Canada has continued to accord most-favoured-nation treatment.
LAOS.....	Franco-Canadian Trade Agreement of 1933 applied to Laos.	Since the creation of Laos as an independent state in 1955, Canada has continued to grant most-favoured-nation treatment.
LEBANON.....	Special arrangement by Order in Council of Nov. 19, 1946.	Canada grants most-favoured-nation tariff rates as long as Lebanon accords reciprocal treatment.
LIBERIA.....	Special arrangement by Order in Council effective Mar. 1, 1955.	Canada grants most-favoured-nation treatment.
LIECHTENSTEIN.....	(See Switzerland.)	
LUXEMBOURG.....	(See Belgium-Luxembourg.)	
MALAGASY REPUBLIC.....	Franco-Canadian Trade Agreement of 1933 applied to Malagasy Republic. GATT effective June 25, 1960.	Exchange of most-favoured-nation treatment.



**Tariff and Trade Arrangements with Non-Commonwealth Countries as at  
Sept. 15, 1966—continued**

Country	Agreement	Tariff Treatment
MALI, FEDERATION OF.....	Franco-Canadian Trade Agreement of 1933 applied to Mali. Mali maintains a <i>de facto</i> application of the GATT.	Since the creation of Mali as an independent state in 1960, Canada has continued to grant most-favoured-nation treatment.
MAURITANIA.....	Franco-Canadian Trade Agreement of 1933 applied to Mauritania. GATT effective Nov. 28, 1960.	Exchange of most-favoured-nation treatment.
MEXICO.....	Trade Agreement signed Feb. 8, 1946; in force provisionally same date. Ratifications exchanged on May 6, 1947; definitively in force 30 days from that date.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
MOROCCO.....	Various agreements relating to former French, Spanish and International Zones of Morocco.	Since the creation of Morocco as an independent state in 1956, Canada has continued to grant most-favoured-nation treatment.
NETHERLANDS.....	Convention of Commerce of July 11, 1924. Suspended during war; reinstated by exchange of notes Feb. 1 and 5, 1946. Includes Netherlands Antilles and Surinam. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
NICARAGUA.....	Trade Agreement signed Dec. 19, 1946; in force provisionally same date. GATT effective May 28, 1950.	Exchange of most-favoured-nation treatment.
NIGER.....	Franco-Canadian Trade Agreement of 1933 applied to Niger. GATT effective Aug. 3, 1960.	Exchange of most-favoured-nation treatment.
NORWAY.....	Convention of Commerce and Navigation with U.K. of Mar. 18, 1826, applied to Canada. GATT effective July 10, 1948.	Exchange of most-favoured-nation treatment. Convention of May 16, 1913 provides means for separate termination by Dominions on one years notice.
PANAMA.....	Order in Council of July 20, 1935, accepted Article 12 of U.K.-Panama Treaty of Commerce of Sept. 25, 1928. Treaty terminated in 1942.	While contractual obligation has expired, Canada and Panama continue to exchange most-favoured-nation treatment.
PARAGUAY.....	Exchange of notes of May 21, 1940; in force June 21, 1940.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
PERU.....	GATT effective Oct. 8, 1951.	Exchange of most-favoured-nation treatment.
PHILIPPINES.....	No agreement.	Canada and Philippines, without contractual obligation, continue to exchange most-favoured-nation treatment (excluding preferences accorded by the Philippines to the United States).
POLAND.....	Convention of Commerce signed July 3, 1935, in force Aug. 15, 1936. Although not a full member, Poland takes part in the work of GATT under a special arrangement.	Exchange of most-favoured-nation treatment including scheduled reductions. May be terminated on three months notice.
PORTUGAL, PORTUGUESE ADJACENT ISLANDS AND PORTUGUESE OVERSEAS PROVINCES.	Trade Agreement signed May 28, 1954 provisionally in effect July 1, 1954, definitively in force on ratification Apr. 29, 1955. GATT effective May 6, 1962.	Exchange of most-favoured-nation treatment. Remains in effect for two years from ratification and thereafter unless terminated on three months notice.

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at  
Sept. 15, 1966—continued**

Country	Agreement	Tariff Treatment
RWANDA.....	GATT effective Jan. 1, 1966.	Canada grants most-favoured-nation treatment.
SENEGAL.....	Franco-Canadian Trade Agreement of 1933 applied to Senegal. GATT effective June 20, 1960.	Exchange of most-favoured-nation treatment.
SOUTH AFRICA.....	Trade Agreement signed Aug. 20, 1932; in force Oct. 13, 1932.	Exchange of British preferential rates on scheduled items. May be terminated on six months notice.
	Exchange of notes Aug. 2-31, 1935; effective retroactively from July 1, 1935. GATT effective June 14, 1948.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
SPAIN AND SPANISH POSSESSIONS.	Since Aug. 1, 1928, Canada has adhered to U.K.-Spain Treaty of Commerce of Oct. 31, 1922.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
	Trade Agreement signed May 26, 1954, provisionally in effect July 1, 1954, definitively in force on ratification June 30, 1955. GATT effective Aug. 29, 1963.	Supplements and amends U.K.-Spain Treaty of Commerce. Remains in effect for three years from ratification, and thereafter unless terminated on three months notice.
SWEDEN.....	U.K.-Sweden Convention of Commerce and Navigation of Mar. 18, 1826 applies to Canada. GATT effective May 1, 1950.	Exchange of most-favoured-nation treatment. Declaration of Nov. 27, 1911 provides means for separate termination by the Dominions on one years notice.
SWITZERLAND.....	U.K.-Switzerland Treaty of Friendship, Commerce and Reciprocal Establishment of Sept. 6, 1855 applies to Canada. By exchange of notes Liechtenstein included under terms of this Agreement, effective July 14, 1947. GATT effective Aug. 1, 1966.	Exchange of most-favoured-nation treatment. Convention of Mar. 30, 1914 provides means for separate termination by the Dominions on one years notice.
SYRIAN ARAB REPUBLIC.....	Special Arrangement by Order in Council of Nov. 19, 1946.	Canada grants most-favoured-nation tariff rates as long as Syria accords reciprocal treatment.
TOGO.....	Franco-Canadian Trade Agreement of 1933 applied to Togo. GATT effective Apr. 27, 1960.	Since the creation of Togo as an independent state in 1960, Canada has continued to grant most-favoured-nation treatment.
TUNISIA.....	Franco-Canadian Trade Agreement of 1933 applied to Tunisia. Tunisia has acceded to GATT provisionally.	Since the creation of Tunisia as an independent state in 1956, Canada has continued to grant most-favoured-nation treatment.
TURKEY.....	Exchange of notes signed Mar. 1, 1948; in effect Mar. 15, 1948. GATT effective Oct. 17, 1951.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
UNION OF SOVIET SOCIALIST REPUBLICS.	Trade Agreement signed Feb. 29, 1956, renewed for another three years Apr. 18, 1960 and again for the same period on Sept. 16, 1963 and again for the same period on June 20, 1966 (the extension to be valid from Apr. 18, 1966).	Exchange of most-favoured-nation treatment and undertaking by U.S.S.R. to purchase a minimum of 6,375,000 long tons of wheat and flour during the three-year period of validity of the extended agreement.
UNITED ARAB REPUBLIC (EGYPT).	Exchange of notes Nov. 26 and Dec. 3, 1952; in force Dec. 3, 1952. The United Arab Republic has acceded provisionally to the GATT.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at  
Sept. 15, 1966—concluded**

Country	Agreement	Tariff Treatment
UNITED STATES.....	Trade Agreement signed Nov. 17, 1938; suspended as long as both countries continue to be contracting parties to GATT. GATT effective Jan. 1, 1948.	Most-favoured-nation treatment exchanged.
UPPER VOLTA.....	Franco-Canadian Trade Agreement of 1933 applies to Upper Volta. GATT effective Aug. 5, 1960.	Exchange of most-favoured-nation treatment.
URUGUAY.....	Trade Agreement signed Aug. 12, 1936; in force May 15, 1940. Additional protocol signed Oct. 19, 1953. GATT effective Dec. 16, 1953.	Most-favoured-nation treatment.
VENEZUELA.....	<i>Modus vivendi</i> signed and brought into force Oct. 11, 1950.	Exchange of most-favoured-nation treatment. Made for one year subject to annual renewal.
VIET-NAM.....	Franco-Canadian Trade Agreement of 1933 applied to Viet-Nam.	Since the creation of Viet-Nam as an independent state in 1955, Canada has continued to accord most-favoured-nation rates.
YUGOSLAVIA.....	Trade Agreements Act of June 11, 1928, accepted Article 30 of U.K.-Serb-Croat-Slovene Treaty of Commerce and Navigation of May 12, 1927; in force Aug. 9, 1928. GATT effective Aug. 25, 1966.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.

### PART III.—TRAVEL BETWEEN CANADA AND OTHER COUNTRIES

Travel, for pleasure and for other reasons, between Canada and other countries continues to increase year by year. It is natural that a good portion of this movement should be between Canada and the United States and that the inward movement from the United States should be somewhat greater than the movement from Canada to that country. Of the 33,890,000 visits of Canadians to other countries in 1965, more than 33,433,000 were to the United States, and of the 34,000,000 visits to Canada from other countries, 33,887,000 were from the United States. Each of these figures was up about 4 p.c. from 1964. However, in recent years, travel between Canada and overseas countries has been expanding at a proportionately greater rate than that between Canada and the United States. Canadian visits overseas in 1965 numbered 456,350, which was 16.5 p.c. higher than in the previous year, and the number of visitors entering Canada directly from overseas reached a total of 132,900, up 17.8 p.c. from 1964.

The effect of these increases in the number of visits to and from Canada and the resulting increases in the expenditures involved is of considerable importance to persons in the travel industry and also to those concerned with Canada's balance of payments position. In 1965 Canadians travelling outside the country spent an estimated \$796,000,000, an amount 12 p.c. more than in 1964, and expenditures of all visitors to Canada amounted to \$747,000,000, an increase of 13 p.c. over the previous year; the result was a deficit of \$49,000,000 compared with one of \$50,000,000 the year before. This deficit was more than accounted for by overseas travel, per capita expenditures on which are very much higher than on travel to and from the United States. While overseas visitors in Canada spent



about \$87,000,000 in 1965, Canadians visiting overseas spent \$248,000,000, a rise of 7 p.c. over 1964, increasing the debit balance on travel account with overseas countries to \$161,000,000 from \$159,000,000. On the other hand, payments by United States residents in Canada increased 12 p.c. to \$660,000,000 and expenditures by Canadian visitors in the United States (including Hawaii) increased 14 p.c. to \$548,000,000, creating a credit balance for Canada of \$112,000,000 compared with \$109,000,000 in 1964.

**Travel Between Canada and the United States.**—Much of the travel between these two countries is by car. Of the 33,900,000 visits of United States residents to Canada in 1965, 26,203,600 were made by this mode of travel; an 0.6-p.c. drop compared with 1964 was accounted for by a 4.5-p.c. decrease in the number of short-term travellers that was not quite offset by a 5.9-p.c. increase in the number of long-term visitors. On the other hand, larger average expenditure per person for both short-term and long-term visits in 1965 resulted in a 10.5-p.c. increase in total expenditure for United States visitors travelling by car, which amounted to \$439,601,000. Length of stay of travellers is always significant since it has an important bearing on the amount of money spent. For instance, 64.9 p.c. of the United States visitors to Canada in 1965 entered and left on the same day, yet accounted for only 11 p.c. or \$72,709,000 of the total amount spent by all United States visitors to Canada; the remaining 89 p.c., or \$587,134,000, was spent by visitors staying one or more nights, although these constituted only 35.1 p.c. of the total number.

Of other modes of travel from the United States, only rail showed a decline from the 1964 total, air and bus travel being up about 15 p.c. and boat travel about 5 p.c. In connection with the latter, it is interesting to note a few features of pleasure boat travel. Such craft entering Canadian waters from the United States in 1965 numbered 78,250, slightly fewer than in 1964. Ontario received 82 p.c. of the entries, Quebec 10 p.c. and British Columbia 8 p.c. Most of them entered during the April-September season and about 60 p.c. entered and left on the same day, although there was considerable variation among the provinces in length of stay, quite evidently depending on the distance between the United States and Canadian ports. Of those entering Ontario, where the ports are very close, 93 p.c. left on the same day; of those entering Quebec, where the ports are somewhat farther apart, 61 p.c. left on the same day; in British Columbia, on the other hand, where distance to be travelled between American and Canadian ports is much greater, 97 p.c. stayed one or more nights.

Canadian travel to the United States established new records in 1965 in both numbers and expenditures, although not all means of travel contributed to the increase as is shown in Table 2. Travellers by automobile comprised 79.5 p.c. of the total number and accounted for \$304,882,000, or 56.7 p.c. of the travel expenditure in the United States (excluding Hawaii), a total higher by 20 p.c. than in 1964. It is interesting to note that Canadians usually spend less time in the United States per visit than United States visitors spend in Canada. In 1965, 81.3 p.c. of the Canadians visiting the United States entered and left on the same day, compared with 64.9 p.c. of the United States visitors to Canada. Short-term Canadian visitors spent 10.5 p.c. of the total payments to the United States, the remaining 89.5 p.c. being spent by long-term visitors who made up only 18.7 p.c. of the total number.

Canadians travel to the United States for a variety of reasons—recreation accounted for an estimated 51.6 p.c. of the visits in 1965, visits to friends and relatives for 30.1 p.c., business for 11.7 p.c., health for 2.6 p.c., and shopping for 2 p.c. Residents of the Atlantic Provinces accounted for the highest percentage (40.4) travelling to the United States to visit friends and relatives; Alberta recorded the highest percentage (23.6) of business trips and Quebec recorded the highest percentage (57.1) of trips for recreation.

### 1.—Number and Expenditure of United States Travellers in Canada and Canadian Travellers in the United States, 1956-65

Year	U.S. Travellers in Canada	U.S. Expenditure in Canada	Canadians Travelling in U.S.	Canadian Expenditure in U.S.	Excess of U.S. Travellers in Canada	Balance of Payments with the U.S.
	No.	\$'000	No.	\$'000	No.	\$'000
1956.....	27,666,500	309,000	27,076,700	391,000	+ 589,800	- 82,000
1957.....	28,619,400	325,000	27,209,400	403,000	+1,410,000	- 78,000
1958.....	28,530,700	309,000	27,421,700	413,000	+1,109,000	-104,000
1959.....	29,880,800	351,000	27,989,900	448,000	+1,890,900	- 97,000
1960.....	29,654,600	375,000	29,045,800	462,000 <sup>1</sup>	+ 608,800	- 87,000
1961.....	30,474,200	435,000	29,288,500	459,000 <sup>1</sup>	+1,185,700	- 24,000
1962.....	31,656,400	512,000	27,944,600	419,000 <sup>1</sup>	+3,711,800	+ 93,000
1963.....	31,864,800	549,000	29,389,800	388,000 <sup>1</sup>	+2,475,000	+161,000
1964.....	32,463,100	590,000	32,164,100	481,000 <sup>1</sup>	+ 299,000	+109,000
1965.....	33,887,300	660,000	33,433,400	548,000 <sup>1</sup>	+ 453,900	+112,000

<sup>1</sup> Includes Hawaii.

### 2.—Number and Expenditure of United States Travellers in Canada and Canadian Travellers in the United States, by Means of Travel and Length of Stay, 1964 and 1965

Year and Item	U.S. Travellers in Canada <sup>1</sup>	U.S. Expenditure in Canada	Canadians Travelling in the U.S. <sup>1</sup>	Canadian Expenditure in the U.S.	Excess of U.S. Travellers in Canada	Excess of U.S. Expenditure in Canada
	No.	\$'000	No.	\$'000	No.	\$'000
<b>1964</b>						
<b>Short-Term (entering and leaving the same day).....</b>	<b>21,274,000</b>	<b>61,363</b>	<b>27,016,000</b>	<b>57,575</b>	<b>-5,742,000</b>	<b>+ 3,788</b>
Automobile.....	16,577,400	35,481	20,764,400	35,777	-4,187,000	- 296
Aircraft.....	34,900	1,100	26,500	1,766	+ 8,400	- 666
Bus.....	107,900	709	27,500	219	+ 80,400	+ 490
Rail.....	246,600	373	23,600	187	+ 223,000	+ 186
Boat.....	285,600	1,398	27,300	105	+ 258,300	+ 1,293
Other (pedestrians, local bus, etc.)	4,021,600	22,302	6,146,700	19,521	-2,125,100	+ 2,781
<b>Long-Term (remaining one or more nights).....</b>	<b>11,189,100</b>	<b>528,785</b>	<b>5,148,100</b>	<b>418,517</b>	<b>+6,041,000</b>	<b>+110,268</b>
Automobile.....	9,793,600	362,187	3,887,300	218,349	+5,906,300	+143,838
Aircraft.....	518,400	81,773	517,900	113,599	+ 500	- 31,826
Bus.....	444,400	45,359	422,000	49,810	+ 22,400	- 4,451
Rail.....	226,200	30,521	232,600	33,020	- 6,400	- 2,499
Boat.....	206,500	8,945	88,300	3,739	+ 118,200	+ 5,206
<b>Totals, 1964.....</b>	<b>32,463,100</b>	<b>590,148</b>	<b>32,164,100</b>	<b>476,092<sup>2</sup></b>	<b>+ 299,000</b>	<b>+114,956</b>
<b>1965</b>						
<b>Short-Term (entering and leaving the same day).....</b>	<b>21,999,200</b>	<b>72,709</b>	<b>27,191,100</b>	<b>56,387</b>	<b>-5,191,900</b>	<b>+ 16,322</b>
Automobile.....	15,830,900	39,895	21,720,300	38,694	-5,889,400	+ 1,201
Aircraft.....	39,200	1,254	25,400	1,367	+ 13,800	- 113
Bus.....	125,600	843	20,200	253	+ 105,400	+ 590
Rail.....	192,000	400	7,600	85	+ 184,400	+ 315
Boat.....	304,400	1,707	17,700	64	+ 286,700	+ 1,643
Other (pedestrians, local bus, etc.)	5,507,100	28,610	5,399,900	15,924	+ 107,200	+ 12,686
<b>Long-Term (remaining one or more nights).....</b>	<b>11,888,100</b>	<b>587,134</b>	<b>6,242,300</b>	<b>480,990</b>	<b>+5,645,800</b>	<b>+106,144</b>
Automobile.....	10,372,700	399,706	4,860,400	266,188	+5,512,300	+133,518
Aircraft.....	584,900	90,847	611,300	129,788	- 26,400	- 38,941
Bus.....	505,300	54,637	469,000	53,326	+ 36,300	+ 1,311
Rail.....	215,400	33,242	208,800	29,227	+ 6,600	+ 4,015
Boat.....	209,800	8,702	92,800	2,461	+ 117,000	+ 6,241
<b>Totals, 1965.....</b>	<b>33,887,300</b>	<b>659,843</b>	<b>33,433,400</b>	<b>537,377<sup>2</sup></b>	<b>+ 453,900</b>	<b>+122,466</b>

<sup>1</sup> Includes substantial amounts of in-transit, commuting and local traffic.<sup>2</sup> Excludes Hawaii.

## 3.—Highway Traffic at Canadian Border Points, 1964 and 1965

Year and Province or Territory	Foreign Vehicles Inward				Canadian Vehicles Returning		
	Entering and Leaving the Same Day	One or More Nights in Canada	Repeats and Taxis	Com- mer- cial Vehicles	Leaving and Returning the Same Day	One or More Nights in U.S.	Com- mer- cial Vehicles
	No.	No.	No.	No.	No.	No.	No.
<b>1964</b>							
Atlantic Provinces ....	301,795	185,521	948,306	57,063	1,947,397	132,386	117,705
Quebec.....	336,977	360,363	162,491	108,058	1,211,561	434,340	177,080
Ontario.....	3,371,730	2,683,576	841,482	211,896	3,600,788	516,646	316,021
Manitoba.....	56,069	60,196	60,749	16,407	163,144	75,025	21,032
Saskatchewan.....	30,079	30,966	17,630	11,514	82,387	27,971	7,714
Alberta.....	14,723	48,550	19,942	9,522	53,295	27,694	6,049
British Columbia.....	213,879	349,389	54,493	67,014	906,150	210,624	25,575
Yukon Territory.....	2,090	21,359	374	4,015	1,392	1,047	420
<b>Totals, 1964.....</b>	<b>4,327,342</b>	<b>3,739,920</b>	<b>2,105,467</b>	<b>485,489</b>	<b>7,966,114</b>	<b>1,425,733</b>	<b>671,596</b>
<b>1965</b>							
Atlantic Provinces ....	318,317	203,076	938,885	58,215	2,014,465	129,248	107,330
Quebec.....	345,603	369,811	150,167	110,054	1,331,193	540,816	176,420
Ontario.....	3,503,907	2,809,470	830,153	241,328	3,711,129	616,565	352,021
Manitoba.....	57,237	63,526	64,425	17,750	164,419	74,761	22,104
Saskatchewan.....	29,069	32,418	16,236	13,488	79,727	28,177	8,637
Alberta.....	16,761	57,799	18,865	10,355	52,022	30,914	6,188
British Columbia.....	240,923	386,836	57,390	68,624	1,009,629	241,857	26,782
Yukon Territory.....	2,915	24,733	432	3,834	1,435	1,164	516
<b>Totals, 1965.....</b>	<b>4,514,732</b>	<b>3,947,669</b>	<b>2,076,553</b>	<b>523,648</b>	<b>8,364,019</b>	<b>1,663,502</b>	<b>699,993</b>

**Travel Between Canada and Overseas Countries.**—Of the 456,350 Canadian residents who travelled overseas in 1965, 386,350 returned directly to Canada and 70,000 via the United States. Travel expenditures in countries other than the United States amounted to \$347,000,000, of which \$167,000,000 was spent for oceanic transportation; airlines received about 89 p.c. of the overseas transportation costs paid by Canadians returning direct to Canada. Included in the oceanic transportation costs is about \$8,000,000 paid to United States carriers which are debited to the travel account of that country, and \$91,000,000 in fares to Canadian carriers which does not represent a movement of money outside Canada and therefore is not included in the net payments of Canadians travelling overseas.

From replies to questionnaires by Canadians returning directly from overseas, the following major destinations were estimated: Britain 96,000; France 82,000; Germany 69,000; the Netherlands 54,000; Switzerland 53,000; and Italy 48,000. In addition to the 96,000 persons visiting Britain only, some 88,000 visited both Britain and Continental Europe. These figures represent visits to the various countries and it is quite usual for one person to visit several countries on the same trip particularly on the Continent of Europe. Visits to the Caribbean area are estimated at 51,000 and visits to Mexico at 18,000. Average lengths of stay were indicated as: Britain, 28-29 days; Britain and Continental Europe (combined), 36 days; Continental Europe, 32-33 days; Bermuda, 11-12 days; the West Indies, 16-17 days; Mexico, 17-18 days; and Hawaii, 22-23 days.

In 1965, Canadians travelling overseas to visit friends and relatives made up between 39 and 40 p.c. of all overseas Canadian visitors; the proportions going to Britain and Continental Europe for that purpose were 65 p.c. and 61 p.c., respectively. Recreation was the main reason for 82 p.c. of all Canadian visits to Bermuda and the Caribbean and for 88 p.c. of the visits to Mexico. Canadians travelling overseas in 1965 were predominantly residents of Ontario, Quebec and British Columbia, accounting for 43 p.c., 28 p.c.



and 11 p.c., respectively, of the total. Purpose of trip showed some variation when comparing direct and indirect Canadian travel overseas. Recreation was the purpose of trip for 64 p.c. of the visitors returning via the United States and visiting friends and relatives was reported by 20 p.c. of those travelling indirectly. In comparison, 50 p.c. of the travellers returning directly from overseas reported their visits as mainly for recreation and 40 p.c. for visiting friends and relatives.

In 1965, about 132,900 overseas visitors came directly to Canada, an increase of close to 18 p.c. over 1964. Expenditures made by all overseas visitors including those entering via the United States, which amounted to \$87,000,000, were almost 21 p.c. higher. Visitors from Britain spent \$34,000,000 or 39 p.c. of the total, and those from other sterling areas \$9,000,000 or 10 p.c., from other European (OECD) countries \$27,000,000 or 31 p.c., and from other areas \$17,000,000 or 20 p.c. During the year, 56,500 visitors arrived directly from Britain, representing 42 p.c. of the total direct non-immigrant entries from overseas countries; those from other Commonwealth countries numbered 10,650 or 8 p.c.; from OECD countries 46,000 or 35 p.c.; and from other areas 19,790 or 15 p.c. Some 119,700 or 90 p.c. of the direct entries arrived by aircraft at Canadian international airports and 13,200 persons or 10 p.c. arrived by ship.

Based on questionnaire replies by overseas visitors to Canada in 1965, residents of Britain remained in Canada 35-36 days, those from other European OECD countries 37-38 days, those from the Commonwealth countries about 20-21 days and those from all other areas 12 days; 66.2 p.c. of all travellers from overseas came to Canada to visit friends and relatives compared with 66.5 p.c. in 1964; 16.9 p.c. reported business as their main purpose of trip compared with 17.8 p.c. in 1964; and those who came for recreational purposes made up 15 p.c. compared with 13.3 p.c. in the previous year. Purpose of trip showed considerable variation according to area of residence. More than 76 p.c. of the visitors from Britain came to visit friends and relatives but the proportion of arrivals for this reason from countries other than the Commonwealth and OECD countries was only 29 p.c.; the respective proportions for recreation were 10 p.c. and 43 p.c. The percentage of travel for business reasons ranged from about 12 p.c. of the visitors from Britain to over 25 p.c. from OECD countries.

---

## CHAPTER XXIII.—PUBLIC FINANCE\*

### CONSPECTUS

	PAGE		PAGE
SECTION 1. COMBINED STATISTICS OF PUBLIC FINANCE FOR ALL GOVERNMENTS.....	1015	Subsection 2. Public Accounts Statistics of Federal Government Finance.....	1040
SECTION 2. TAXATION IN CANADA.....	1018	Subsection 3. Revenue from Taxation.....	1045
Subsection 1. Federal Taxes.....	1021	SECTION 4. FEDERAL-PROVINCIAL CONDITIONAL GRANTS AND SHARED-COST PROGRAMS.....	1050
Subsection 2. Provincial Taxes.....	1030	SECTION 5. PROVINCIAL GOVERNMENT FINANCE.....	1057
Subsection 3. Municipal Taxes.....	1034	SECTION 6. MUNICIPAL GOVERNMENT FINANCE.....	1064
Subsection 4. Miscellaneous Levies.....	1034		
SECTION 3. FEDERAL GOVERNMENT FINANCE.....	1035		
Subsection 1. DBS Statistics of Federal Government Finance.....	1035		

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

Combined statistics of public finance for all governments in Canada—federal, provincial and municipal—are presented in Section 1 of this Chapter and Section 2 covers the incidence of taxation at the three levels. More detailed information for each level of government is given in Sections 3, 5 and 6. Section 4 gives information on the rapidly growing list of joint federal-provincial programs and on the extent of federal financial participation in such programs.

### Section 1.—Combined Statistics of Public Finance for All Governments

**Combined Revenue and Expenditure.**—Tables 1 and 2 give details of the federal, provincial and municipal net combined revenue by source and net combined current and capital expenditure by function, respectively, for 1962 and 1963. This net basis has been prepared by deducting from revenue, and from the appropriate expenditure, certain specified amounts such as grants-in-aid and shared-cost contributions from other governments, institutional revenue, and interest, premium, discount and exchange revenue. Amounts provided for debt retirement are excluded to avoid duplication since all expenditure resulting from capital borrowings is included.

Inter-government transfers such as subsidy payments by the Federal Government to the provincial governments are unconditional grants and therefore cannot be offset against any specific expenditure. These are set out separately in Tables 1 and 2 in order to prevent duplication and to provide additive totals. Because of the differing accounting practices of governments and variations in fiscal year-ends, discrepancies appear between the amounts recorded as inter-government transfers in the two tables.

\* Except as otherwise indicated, revised in the Governments Division, Dominion Bureau of Statistics.

## 1.—Combined Revenue of All Governments, 1962 and 1963

NOTE.—Figures are for fiscal years ended nearest Dec. 31.

Source	1962				1963			
	Federal	Pro- vincial	Munic- ipal	Total	Federal	Pro- vincial	Munic- ipal	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Taxes—</b>								
Income—								
Corporations.....	1,298,087	395,340	—	1,693,427	1,374,708	412,236	—	1,786,944
Individuals.....	2,018,276	359,921	—	2,378,197	2,167,674	389,282	—	2,556,956
Interest, etc., going abroad..	129,137	—	—	129,137	124,500	—	—	124,500
General sales.....	1,108,210	515,604	42,292	1,666,106	1,277,815	562,021	58,080	1,897,916
Motor fuel and fuel oil sales...	—	483,669	635	484,304	—	539,007	861	539,868
Other sales.....	—	65,453	3,242	68,695	—	70,098	3,493	73,591
Excise duties and taxes.....	641,256	—	—	641,256	665,764	—	—	665,764
Customs import duties.....	644,992	—	—	644,992	581,441	—	—	581,441
Real and personal property...	—	9,001	1,529,993	1,538,994	—	9,089	1,621,785	1,630,874
Business.....	—	—	48,106 <sup>1</sup>	48,106	—	—	51,733	51,733
Estate taxes and succession duties.....	87,143	72,014	—	159,157	90,671	85,679	—	176,350
Other.....	491	186,569 <sup>2</sup>	14,407	201,467	219	197,883	16,678	214,780
<b>Totals, Taxes.....</b>	<b>5,927,592</b>	<b>2,087,571</b>	<b>1,638,675</b>	<b>9,653,838</b>	<b>6,282,792</b>	<b>2,265,295</b>	<b>1,752,630</b>	<b>10,300,717</b>
<b>Privileges, Licences and Permits—</b>								
Liquor control and regulation..	11	53,062	—	53,073	11	55,502	—	55,513
Motor vehicles.....	—	186,829	—	186,829	—	210,762	—	210,762
Natural resources.....	3,928	315,552	—	319,480	5,232	366,617	—	371,849
Other.....	22,537	33,862	29,208	85,607	23,622	36,421	31,907	91,950
<b>Totals, Privileges, Licences and Permits.....</b>	<b>26,476</b>	<b>589,305</b>	<b>29,208</b>	<b>644,989</b>	<b>28,865</b>	<b>669,302</b>	<b>31,907</b>	<b>730,074</b>
<b>Sales and services.....</b>	<b>62,617</b>	<b>56,242</b>	<b>—</b>	<b>118,859</b>	<b>67,051</b>	<b>54,017</b>	<b>—</b>	<b>121,068</b>
<b>Fines and penalties.....</b>	<b>1,213</b>	<b>9,492</b>	<b>—</b>	<b>10,705</b>	<b>1,548</b>	<b>10,681</b>	<b>—</b>	<b>12,229</b>
<b>Contributions from Government Enterprises—</b>								
Own Enterprises—								
Liquor boards and com- missions.....	—	216,816	—	216,816	—	232,877	—	232,877
Other.....	107,084	8,318	27,094	142,496	124,651	13,250	26,141	164,042
Federal and provincial in lieu of taxes.....	—	—	20,524	20,524	—	—	24,208	24,208
Other revenue.....	279,271	4,259	128,695	412,225	322,312	4,543	146,091	472,946
Non-revenue and surplus receipts.	22,751	4,885	—	27,636	27,695	10,009	—	37,704
<b>Totals, Net General Revenue excluding Inter-government Transfers....</b>	<b>6,427,004</b>	<b>2,976,888</b>	<b>1,844,196</b>	<b>11,248,088</b>	<b>6,854,914</b>	<b>3,259,974</b>	<b>1,980,977</b>	<b>12,095,865</b>
<b>Inter-government Transfers—</b>								
Fiscal and tax-sharing arrange- ments.....	—	202,249	—	202,249	—	182,179	—	182,179
Share of income tax on power utilities.....	—	10,207	—	10,207	—	9,868	—	9,868
Subsidies.....	—	66,470	78,743	145,213	—	66,526	78,857	145,383
Special payments.....	—	—	1,642	1,642	—	—	1,740	1,740
Grants in lieu of municipal taxes on federal and provincial pro- perty.....	—	—	29,423	29,423	—	—	31,528	31,528
<b>Grand Totals, Net General Revenue.....</b>	<b>6,427,004</b>	<b>3,255,814</b>	<b>1,954,004</b>	<b>11,636,822</b>	<b>6,854,914</b>	<b>3,518,547</b>	<b>2,093,102</b>	<b>12,466,563</b>

<sup>1</sup> Incomplete; not separable from real property taxes in some provinces.  
premiums amounting to \$119,425 in 1962 and \$124,447 in 1963.<sup>2</sup> Includes hospital insurance



## 2.—Combined Expenditure of All Governments, 1962 and 1963

NOTE.—Figures are for fiscal years ended nearest Dec. 31.

Function	1962				1963			
	Federal	Pro- vincial	Municipal	Total	Federal	Pro- vincial	Municipal	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Defence services and mutual aid.	1,594,645	—	—	1,594,645	1,717,208	—	—	1,717,208
Veterans' pensions and other benefits.....	337,761	—	—	337,761	335,902	—	—	335,902
Health—								
Hospital care.....	371,179	588,996	48,775	1,008,950	429,517	582,490	28,221	1,040,228
Other.....	54,197	66,133	23,970	144,300	62,419	109,724	26,587	198,730
Totals, Health.....	425,376	655,129	72,745	1,153,250	491,936	692,214	54,808	1,238,958
Sanitation and waste removal...	...	—	177,700	177,700	—	—	183,471	183,471
Social Welfare—								
Aid to unemployed and unemployables.....	96,477	115,352	12,464	224,293	107,370	122,346	12,552	242,268
National employment and unemployment insurance services.....	106,387	—	—	106,387	110,290	—	—	110,290
Aid to blind and disabled persons.....	24,516	23,342	—	47,858	25,195	23,835	—	49,030
Old age assistance.....	38,350 <sup>1</sup>	43,992 <sup>2</sup>	—	82,342	39,401 <sup>1</sup>	46,735 <sup>2</sup>	—	86,136
Old age security fund.....	734,382 <sup>3</sup>	—	—	734,382	808,391 <sup>3</sup>	—	—	808,391
Other aid to the aged.....	—	30,758 <sup>4</sup>	1,697 <sup>5</sup>	32,455	—	31,349 <sup>4</sup>	1,814 <sup>5</sup>	33,163
Family allowances.....	534,634	—	—	534,634	541,321	—	—	541,321
Other.....	30,297	78,213	32,827	141,337	34,310	85,920	32,067	152,297
Totals, Social Welfare.....	1,565,043	291,657	46,988	1,903,688	1,666,278	310,185	46,433	2,022,896
Education.....	274,934	987,776	877,811	2,140,521	206,326	1,089,453	888,158	2,183,937
Transportation and Communications—								
Highways, roads and bridges..	74,131	704,679	379,852	1,158,662	81,565	784,512	404,251	1,270,328
Other.....	360,473	6,206	—	366,679	368,888	5,491	—	374,379
Totals, Transportation and Communications.....	434,604	710,885	379,852	1,525,341	450,453	790,003	404,251	1,644,707
Natural resources and primary industries.....	357,095	192,188	—	549,283	421,232	208,018	—	629,250
Debt charges excluding debt retirement.....	754,940	102,733	177,482	1,035,155	822,851	122,505	200,700	1,146,056
Contributions to own government enterprises.....	155,301	5,605	23,448	184,354	149,475	3,789	27,397	180,661
Other Expenditure—								
General government.....	289,540	142,033	168,579	600,152	298,702	153,592	188,761	641,055
Protection of persons and property.....	95,407	158,290	282,822	536,519	99,126	172,100	298,543	569,769
International co-operation and assistance.....	56,892	—	—	56,892	74,621	—	—	74,621
Recreation and cultural services.....	32,391	29,772	102,775	164,938	34,500	29,632	106,181	170,313
Other.....	449,684	68,331	175,235	693,250	491,336	87,429	154,653	733,418
Totals, Other Expenditure...	923,914	398,426	729,411	2,051,751	998,285	442,753	748,138	2,189,176
Non-expend and surplus payments.....	34,426	13,405	—	47,831	425	12,219	—	12,644
<b>Totals, Net General Expenditure excluding inter-government transfers.....</b>	<b>6,858,039</b>	<b>3,357,804</b>	<b>2,485,437</b>	<b>12,701,280</b>	<b>7,260,371</b>	<b>3,671,139</b>	<b>2,553,356</b>	<b>13,484,866</b>

<sup>1</sup> Federal payments to the provinces for the federal share under the Old Age Assistance Act. <sup>2</sup> Payments of old age assistance pensions to individuals. <sup>3</sup> Old age security pensions to individuals. <sup>4</sup> All aid other than old age assistance pensions. <sup>5</sup> Consists largely of contributions to homes for the aged.

## 2.—Combined Expenditure of All Governments, 1962 and 1963—concluded

Function	1962				1963			
	Federal	Pro- vincial	Municipal	Total	Federal	Pro- vincial	Municipal	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Inter-government Transfers—								
Fiscal and tax-sharing arrangements.....	202,295	—	—	202,295	182,329	—	—	182,329
Share of income tax on power utilities.....	10,000	—	—	10,000	9,868	—	—	9,868
Subsidies.....	66,471	74,104	—	140,575	66,525	75,196	—	141,721
Special payments.....	1,642	—	—	1,642	1,899	—	—	1,899
Grants in lieu of municipal taxes on federal and provincial property.....	29,947	3,522	—	33,469	31,920	4,030	—	35,950
<b>Grand Totals, Net General Expenditure.....</b>	<b>7,168,394</b>	<b>3,435,430</b>	<b>2,485,437</b>	<b>13,089,261</b>	<b>7,552,912</b>	<b>3,750,365</b>	<b>2,553,356</b>	<b>13,856,633</b>

**Consolidated Debt.**—Table 3 gives details of combined debt of all governments for 1962 and 1963 with the aggregate debt of the federal, provincial and municipal governments; the inter-government debt is deducted to arrive at a consolidated government figure.

## Section 2.—Taxation in Canada\*

Canada is a federal state with a central government and ten provincial governments. In 1867 the principal colonies of the British Crown in North America joined together to form the nucleus of a new nation and the British North America Act of that year became its written constitution. This statute created a central government with certain powers while continuing the existence of political subdivisions called provinces with powers of their own.

Under the British North America Act the Parliament of Canada has the right to raise "money by any mode or system of taxation" while the provincial legislatures are restricted to "direct taxation within the province in order to the raising of a revenue for provincial purposes". Thus the provinces have a right to share only in the field of direct taxation while the Federal Government is not restricted in any way in matters of taxation. The British North America Act also empowers the provincial legislatures to make laws regarding "municipal institutions in the province". This means that the municipalities derive their incorporation with its associated powers, fiscal and otherwise, from the provincial government concerned. Thus, from a practical standpoint, municipalities are also limited to direct taxation.

A direct tax is generally recognized as one "which is demanded from the very person who it is intended or desired should pay it". This conception has limited the provincial governments to the imposition of income tax, retail sales tax, succession duties and an assortment of other direct levies. In turn, municipalities, acting under the guidance of provincial legislation, tax real estate, water consumption and places of business. The Federal Government levies direct taxes on income, on gifts and on the estates of deceased persons, and indirect taxes such as excise taxes, excise and customs duties, and a sales tax.

\* Revised (August 1966) in the Taxation Division, Department of Finance, under the direction of F. R. Irwin, Director of the Division, and by the provincial authorities concerned.

## 3.—Consolidated Debt of All Governments, 1962 and 1963

NOTE.—Figures are for fiscal years ended nearest Dec. 31.

Item	1962					1963						
	Federal	Pro- vincial	Muni- cipal	Total	Deduct Inter- government Debt	Consoli- dated Govern- ment Debt	Federal	Pro- vincial	Muni- cipal	Total	Deduct Inter- government Debt	Consoli- dated Govern- ment Debt
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Direct Debt—</b>												
Funded debt:	15,796,886	4,410,573	5,076,334	25,283,743	174,048	25,109,695	16,510,097	4,716,459	5,527,227	26,753,783	165,798	26,587,985
Less sinking funds:	22,312	688,200	190,148	900,660	—	900,660	—	685,853	228,478	914,331	—	914,331
Net funded debt:	15,774,574	3,722,373	4,886,186	24,383,083	174,048	24,209,035	16,510,097	4,030,606	5,298,749	25,839,452	165,798	25,673,654
Treasury bills <sup>2</sup>	2,165,000	63,085	—	2,228,085	—	2,228,085	2,230,000	68,015	—	2,298,015	—	2,298,015
Savings deposits	—	25,880	—	25,880	—	25,880	24,605	74,005	—	24,605	—	24,605
Temporary loans	—	39,608	250,761	290,369	—	290,369	—	76,415	222,319	398,734	—	398,734
Other direct liabilities	6,608,290	672,636	507,118	7,788,044	209,505	7,578,539	6,985,901	683,114	567,886	8,236,901	236,834	8,000,067
<b>Totals, Direct Debt (less sinking funds)</b>	<b>24,573,694</b>	<b>4,497,702</b>	<b>5,644,065</b>	<b>34,715,461</b>	<b>383,553</b>	<b>34,331,908</b>	<b>35,759,603</b>	<b>4,858,150</b>	<b>6,188,954</b>	<b>36,797,707</b>	<b>402,632</b>	<b>36,395,075</b>
<b>Indirect Debt—</b>												
Guaranteed bonds	1,381,361	4,647,494	12,317	6,041,172	505,425	5,535,747	1,377,611	5,516,312	11,340	6,905,263	566,232	6,339,031
Less sinking funds	—	137,557	333	137,890	5,087	132,803	—	213,968	369	214,337	4,190	210,147
Net guaranteed bonds	1,381,361	4,509,937	11,984	5,903,282	500,338	5,402,944	1,377,611	5,302,344	10,971	6,690,926	562,042	6,128,884
Loans under the Municipal Improve- ment Assistance Act, 1938	—	1,294	—	1,294	1,294	—	—	1,116	—	1,116	1,116	—
Guaranteed bank loans and other in- direct liabilities	4,610,975 <sup>4</sup>	168,830	11	4,779,816	4,967	4,774,849	5,110,626 <sup>4</sup>	165,695	21	5,276,342	6,012	5,270,330
<b>Totals, Indirect Debt (less sinking funds)</b>	<b>5,992,336</b>	<b>4,680,061</b>	<b>11,995</b>	<b>10,684,392</b>	<b>506,599</b>	<b>10,177,793</b>	<b>6,488,237</b>	<b>5,469,155</b>	<b>10,992</b>	<b>11,968,384</b>	<b>569,170</b>	<b>11,399,214</b>
<b>Grand Totals</b>	<b>30,566,030</b>	<b>9,177,763</b>	<b>5,656,060</b>	<b>45,399,853</b>	<b>890,152</b>	<b>44,509,701</b>	<b>32,238,840</b>	<b>10,327,305</b>	<b>6,199,946</b>	<b>48,766,091</b>	<b>971,802</b>	<b>47,794,289</b>

<sup>1</sup> Includes treasury bills having a term of two or more years.<sup>2</sup> Includes treasury bills having a term of less than two years.<sup>3</sup> Included in "Other direct liabilities".<sup>4</sup> Excludes contingent liability in respect of Federal Government guarantee of deposits maintained by chartered banks in the Bank of Canada and miscellaneous guarantees, the amounts of which were not finally determined at the close of the fiscal year.



The increasing use by both the federal and the provincial governments of their rights in the field of direct taxation in the 1930s resulted in uneconomic duplication and some severe tax levies. Starting in 1941, a series of tax agreements were concluded between the federal and the provincial governments to promote the orderly imposition of direct taxes. The duration of each agreement was normally five years. Under the earlier agreements, the participating provinces undertook, in return for compensation, not to use or permit their municipalities to use certain of the direct taxes. Under the present arrangements, the federal income tax otherwise payable in all provinces and the estate tax otherwise payable in three provinces are abated by certain percentages to make room for provincial levies.

The current arrangement became operative on Apr. 1, 1962 and will run until Mar. 31, 1967. Under this arrangement there is a partial federal withdrawal from the field of direct taxation and a re-entry of all provinces into the vacated area. The federal personal income tax otherwise payable on income earned in a province and on income received by a resident of a province is reduced by the following percentages: 16 p.c. in 1962; 17 p.c. in 1963; 18 p.c. in 1964; 21 p.c. in 1965;\* and 24 p.c. in 1966.\* In 1965 and 1966, the federal tax abatements for income earned in Quebec or received by a resident of Quebec will be 44 p.c. and 47 p.c., respectively. The additional abatement in the case of Quebec is to allow that province to collect revenue to pay for certain programs that are paid for in whole or in part by the Federal Government in other provinces. The Federal Government also reduces its rate of corporation income tax on taxable income of corporations earned in the provinces. The reduction is 9 p.c. of taxable income earned in any province except Quebec and 10 p.c. in Quebec. The additional 1 p.c. reduction in Quebec is to compensate for the additional tax levied by the province on corporation income to provide grants to universities. These provincial grants replace federal grants which in other provinces are paid to the universities by the Federal Government through the Canadian Universities Foundation. The Federal Government also abates the federal estate tax otherwise payable by 75 p.c. in respect of property situated in a province which levies its own death tax. Only Ontario, Quebec and British Columbia at present levy death taxes in the form of succession duties.†

These reductions in federal income tax and estate tax under the terms of the 1962-67 fiscal arrangements do not apply to the Yukon Territory or the Northwest Territories or to income earned outside Canada. The Yukon and Northwest Territories do not impose income taxes or death taxes.

The provincial tax rates are not restricted to the extent of the federal withdrawal. The constitutional position of the provinces permits them unlimited use of direct taxes for the raising of revenue for provincial purposes. However, in all but four provinces (Ontario, Quebec, Manitoba and Saskatchewan) the provincial rates of income tax coincide with the amount of the federal abatement.

As part of the 1962-67 fiscal arrangements, the Federal Government has entered into tax collection agreements under which it collects the provincial personal income taxes for all provinces except Quebec and the provincial corporation income taxes for all provinces except Ontario and Quebec.

\* The original agreement provided for abatements of 19 p.c. in 1965 and 20 p.c. in 1966. However, following a federal-provincial conference in April 1964, the provinces were granted an additional two percentage points in 1965 and four percentage points in 1966.

† The original agreement was for a 50-p.c. abatement. However, at the conclusion of a federal-provincial conference in late 1963, it was increased to 75 p.c. in respect of deaths occurring after Mar. 31, 1964. Currently, only the estates of domiciliaries of British Columbia qualify for the full 75 p.c. abatement. Quebec and Ontario estates are temporarily eligible for only 50 p.c. because these two provinces have decided for the time being to take a payment from the Federal Government on account of the additional 25-p.c. abatement rather than to increase their succession duty rates.

**Subsection 1.—Federal Taxes****Individual Income Tax**

Every individual who is resident in Canada at any time during a year is liable for the payment of income tax for that year. Every non-resident individual who is employed or carries on business in Canada during a year is required to pay tax on the part of his income earned in Canada. The term "residence" is difficult to define simply but, generally speaking, it is taken to be the place where a person resides or where he maintains a dwelling ready at all times for his use. There are also extensions of the meaning of Canadian resident to include a person who has sojourned in Canada for an aggregate period of 183 days in a taxation year, or a person who was during the year a member of the Armed Forces of Canada, or an ambassador, a high commissioner, or an officer or servant of Canada or of any one of its provinces, or the spouse or dependent child of any such person. The extended meaning of residence also includes employees who go from Canada to work under certain international development assistance programs.

The Canadian tax law uses the concepts "income" and "taxable income". The income of a resident of Canada for a taxation year comprises his revenues from all sources inside or outside Canada and includes income for the year from all businesses, property, offices and employments. It does not include capital gains unless they arise out of the conduct of a business or as a result of an adventure in the nature of trade.

In computing his income for a taxation year, an individual must include all dividends, fees, annuities, pension benefits, allowances, interest, alimony, maintenance payments and other miscellaneous sources of income. On the other hand, war service disability pensions paid by Canada or an ally of Her Majesty at the time of the war service, unemployment insurance benefits, compensation in respect of an injury or death paid under a Workmen's Compensation Act of a province and family allowances do not have to be included in the computation of income.

In computing his income, an individual who is carrying on business may deduct business expenses including depreciation (called capital cost allowances), interest on borrowed money, reserves for doubtful debts, contributions to pension plans or deferred profit-sharing plans for his employees, bad debts, and expenses incurred for scientific research. In general, no deductions are allowed in computing income from salary and wages, although there are exceptions such as travelling expenses of employees who have to travel as they perform their work, union dues, alimony payments and contributions to registered pension plans. Individuals may deduct, within limits, amounts set aside to provide a future income under registered retirement savings plans. Students attending universities, colleges, high schools, public schools or certain other certified educational institutions in Canada may deduct their tuition fees if they exceed \$25 per annum. Students in full-time attendance at universities outside Canada may deduct their tuition fees.

Having computed his income, the individual then calculates his taxable income by deducting certain exemptions and deductions. These exemptions and deductions are as follows: for single status, \$1,000; for married status, \$2,000; for dependent children eligible to receive family allowance,\* \$300 per child; for other dependants (as defined in the law), \$550 per dependant; where the taxpayer is 70 years of age or over (or between 65 and 70 years of age if not in receipt of an old age security pension), an additional \$500; where the

\* Family allowances are monthly welfare payments by the Federal Government to the parents or guardians of children under 16 years of age. The allowance is \$6 for each child under 10 years of age and \$8 for each child between the ages of 10 and 16. These allowances are not subject to income tax. Payments are also made in respect of children between the ages of 16 and 18 in full-time attendance at educational institutions; such payments of \$10 a month are called youth allowances. The right to deduct \$550 for a dependent child is not affected by the receipt of these youth allowances.

taxpayer is blind or confined for the whole of the taxation year to a bed or a wheelchair, an additional \$500; charitable donations, up to 10 p.c. of income; and medical expenses, in excess of 3 p.c. of income. In lieu of claiming deductions for charitable donations and medical expenses, an individual may claim a standard deduction of \$100.

As already stated, an individual who is resident in Canada for the whole year is taxed on his income from both inside and outside Canada. An individual who is not resident in Canada at any time during the year but who carries on business in Canada or who earns salary or wages in Canada is taxed only on the income earned in Canada. In computing taxable income earned in Canada, such a non-resident individual is allowed to deduct that part of the exemptions and deductions that may reasonably be attributed to the income earned in Canada. (A non-resident who derives investment income from Canada is taxed in a different way described on p. 1021.) An individual who ceases to be a resident of Canada during the year or who becomes a resident during the year so that he is resident for only part of the year will be subject to income tax in Canada on only that part of his income for the year received while he is resident in Canada. In these circumstances, the deductions from income permitted for determining taxable income will be the amount that may reasonably be considered as applicable to the period during which he is resident in Canada.

A progressive schedule of rates is applied to taxable income, beginning at 11 p.c. on the first \$1,000 of taxable income and increasing to 80 p.c. on taxable income in excess of \$400,000. In addition, an old age security tax is levied on taxable income at the rate of 4 p.c. with a maximum of \$120\* reached at the level of \$3,000.

After calculating income tax using this progressive schedule of rates, an individual is allowed a deduction from his tax under four main headings. (1) *Dividend Tax Credit*—to partially eliminate the double taxation of corporate profits and to encourage participation in the ownership of Canadian companies, Canadian resident individuals are allowed to deduct from their tax an amount equal to 20 p.c. of the net dividends they receive from Canadian taxable companies. (2) *Foreign Tax Credit*—foreign taxes paid on income from foreign sources may be credited against Canadian income tax but the credit may not exceed the proportion of Canadian tax related to such income. (3) *Abatement under Federal-Provincial Fiscal Arrangements*—in 1966 the federal personal income tax otherwise payable on income of a resident of a province and on income earned in a province is reduced by 24 p.c., except in the case of income earned in Quebec or received by a resident of Quebec where it is 47 p.c. (see p. 1020). (4) *General Tax Reduction*—in 1966 all individuals may deduct from their tax an amount equal to the aggregate of 4 p.c. of their basic tax, not exceeding \$240, and 12 p.c. of their basic tax, not exceeding \$12. In 1967 and subsequent years, this deduction will be 20 p.c. of basic tax, not exceeding \$20. "Basic tax" is personal income tax, excluding the old age security tax, after deduction of the dividend tax credit but before the abatement for provincial income tax.

To a very large extent, individual income tax is payable as the income is earned. Taxpayers in receipt of salary or wages have tax deducted from their pay by their employer and in this way pay nearly 100 p.c. of their tax liability during the calendar year. The balance of the tax, if any, is payable at the time of filing the tax return before Apr. 30 in the following year. Persons with more than 25 p.c. of their income from sources other than salary or wages must pay tax by quarterly instalments throughout the year and returns must be filed before Apr. 30 in the following calendar year.

The following statement shows what taxpayers pay (1966) at various levels of income. In calculating these taxes it has been assumed that all taxpayers take the standard deduction of \$100 and no allowance has been made for the 20-p.c. dividend tax credit.

\* Raised in December 1966 to \$240, effective Jan. 1, 1967.



<i>Status</i>	<i>Income</i>	<i>Income Tax</i>	<i>Old Age Security Tax</i>
	\$	\$	\$
Single taxpayer—no dependants.....	1,200	9	4
	1,500	37	16
	2,000	83	36
	2,500	147	56
	3,000	215	76
	5,000	555	120
	10,000	1,754	120
	20,000	5,580	120
	50,000	20,713	120
	100,000	50,603	120
Married taxpayer—no dependants.....	2,200	9	4
	2,500	37	16
	3,000	83	36
	5,000	375	116
	10,000	1,470	120
	20,000	5,148	120
	50,000	20,163	120
	100,000	49,953	120
Married taxpayer—two children eligible for family allowances.....	2,800	9	4
	3,000	28	12
	5,000	277	92
	10,000	1,320	120
	20,000	4,889	120
	50,000	19,833	120
	100,000	49,563	120

The income taxes shown above are the combined federal and provincial taxes in all provinces where the provincial tax is the same as the federal abatement (i.e., in all provinces except Quebec, Manitoba and Saskatchewan). In Quebec the provincial tax approximates the federal abatement; in Manitoba and Saskatchewan the provincial tax exceeds the abatement by 5 percentage points.

### Corporation Income Tax

The Income Tax Act levies a tax upon the income from everywhere in the world of corporations resident in Canada and upon the income attributable to operations in Canada of non-resident corporations carrying on business in Canada. In computing their income, corporations may deduct operating expenses including municipal real estate taxes, reserves for doubtful debts, bad debts, and interest on borrowed money. They may not deduct provincial income taxes other than provincial taxes on income derived from mining operations. (For this purpose "income from mining operations" is specially defined.)

Regulations covering capital cost allowances (depreciation) permit taxpayers to deduct over a period of years the actual cost of all depreciable property. The yearly deductions of normal capital cost allowances are computed on the diminishing balance principle. (Taxpayers engaged in farming and fishing may choose between this and the straight-line method.) Published regulations establish a number of classes of property and maximum rates. There is provision for recapture of any amount allowed in excess of the ultimate net capital cost of any asset.

Accelerated depreciation is available to taxpayers in certain circumstances and for a limited period of time. Straight-line depreciation at a rate not exceeding 50 p.c. is granted in respect of new machinery and equipment that would otherwise fall in Class 8 of the Income Tax Regulations acquired in the period June 14, 1963 to Dec. 31, 1966 for use in manufacturing or processing businesses by individuals resident in Canada or by companies resident in Canada that have a degree of Canadian ownership. A company that has a

degree of Canadian ownership is one which throughout any 60-day period included in the 120-day period commencing 60 days before the first day of the year in question complies with the following conditions: (1) it was resident in Canada; (2) not less than 25 p.c. of its directors were residents of Canada; and (3) either (a) not less than 25 p.c. of its shares having full voting rights and shares representing not less than 25 p.c. of its equity share capital were owned by individuals resident in Canada or corporations controlled in Canada, or (b) a class or classes of its shares having full voting rights were listed on a Canadian stock exchange and no one non-resident person and no one corporation that did not comply with (a) above owned more than 75 p.c. of the shares having full voting rights, and equity shares of the corporation representing not less than 50 p.c. of the equity share capital of the corporation were listed on a Canadian stock exchange and no one non-resident person or no one corporation that did not comply with (a) above owned equity shares representing more than 75 p.c. of its equity share capital. For new manufacturing or processing businesses in designated areas of slower growth there is no requirement that they have a degree of Canadian ownership to qualify for this 50-p.c. straight-line depreciation. Moreover, the period during which their expenditures on eligible assets qualify for this accelerated write-off extends from Dec. 5, 1963 to Mar. 31, 1967. Depreciation at the accelerated rate of 20 p.c. on a straight-line basis is also available in respect of new buildings acquired in designated areas of slower growth in the period commencing on Dec. 5, 1963 and ending on Mar. 31, 1967. Accelerated depreciation is also allowed in respect of new buildings or other structures for grain storage acquired in the period May 1, 1965 to Dec. 31, 1966\* (full write-off in four years) and in respect of property acquired in the period Apr. 27, 1965 to Dec. 31, 1967 to prevent water pollution (full write-off in two years).

The 1966 Budget announced the temporary reductions of the capital cost allowances that could otherwise be claimed for certain classes of assets acquired during the period Mar. 30, 1966 to Oct. 1, 1967. The reductions will operate by recognizing in the taxation year in which the property is acquired and in the next two taxation years part only of the cost for capital cost allowance purposes. The principal classes of assets affected include most kinds of buildings and machinery and equipment with the exception of heavy construction equipment and automotive equipment, pipelines and the generating and distributing equipment of public utilities. Assets eligible for accelerated depreciation under programs to promote the acquisition of "degree of Canadian ownership" status or the development of "designated areas" are not affected by this curtailment of normal capital cost allowances.

Expenditures on scientific research by corporations qualify for special tax treatment. Generally speaking, all expenditures on scientific research related to the business of the taxpayer may be written off for tax purposes in the year when incurred. In addition, corporations are permitted to deduct, in computing income for tax purposes, 150 p.c. of their increased expenditures on scientific research in Canada. This concession is available until the end of the 1966 taxation year.

Taxpayers operating mines, oil wells and gas wells are allowed a depletion allowance, usually computed as a percentage of profits derived from mineral, oil or gas production, which continues as long as the mine or well is in operation. This allowance is in addition to capital cost allowances on buildings, machinery and similar depreciable assets used by the taxpayer and the deduction of exploration and drilling expenses. Taxpayers operating timber limits receive an annual allowance sometimes called a depletion allowance. This is a rateable proportion of the amount invested in the limit and is based on the amount of timber cut in the year. When the amount invested in the limit has been recovered, no further allowance is given.

\* Authority has been granted to extend in certain circumstances the date by which these buildings or structures must be completed.

In computing taxable income, corporations may deduct dividends received from other Canadian taxpaying corporations and also from foreign corporations in which the Canadian corporation has at least 25 p.c. stock ownership. Business losses may be carried back one year or forward five years and deducted in computing taxable income. Corporations may also deduct donations to charitable organizations up to a maximum of 10 p.c. of their income.

The general rates of tax on corporate taxable income are 18 p.c. on the first \$35,000 of taxable income and 47 p.c. on taxable income in excess of \$35,000. Corporations deriving more than one half of their gross revenue from the sale of electric energy, gas or steam pay tax on their taxable income from such sources at the rate of 18 p.c. on the first \$35,000 of taxable income plus 45 p.c. on taxable income in excess of \$35,000. Corporations that qualify as investment companies pay a tax of 18 p.c. on their taxable income. In addition to these rates, all corporations pay an old age security tax of 3 p.c. of taxable income, bringing their rates up to 21 p.c. and 50 p.c. (21 p.c. and 48 p.c. for the public utility companies and 21 p.c. for investment companies).

In calculating the amount of their income tax, corporations are allowed a deduction from tax under three headings. (1) *Foreign Tax Credit*—foreign taxes paid on income from foreign sources may be credited against Canadian income tax but the credit may not exceed the proportion of Canadian tax relative to such income. (2) *Abatement under Federal-Provincial Fiscal Arrangements*—corporations may deduct from their federal tax otherwise payable a tax abatement equal to a fixed percentage of their taxable income attributable to operations in a Canadian province. This abatement is to make room for the provincial income tax levied by each Canadian province. The amount of the abatement is 9 p.c. of taxable income attributable to operations in any province except Quebec and 10 p.c. of taxable income attributable to operations in Quebec. (3) *Provincial Logging Tax*—corporations may deduct from their federal tax otherwise payable an amount equal to two thirds of a provincial tax on income from logging operations not exceeding two thirds of 10 p.c. of the corporation's income from logging operations in the province. (At present only Ontario, Quebec and British Columbia impose logging taxes—see p. 1032.)

Income from the operation of a new mine, including wells for extracting potash by the solution method, is exempt from income tax during the first 36 months of commercial production. Income from manufacturing or processing businesses established in certain designated areas of slower growth during the period Dec. 5, 1963 to Mar. 31, 1967 is eligible for a three-year exemption from income tax.\*

Corporations are required to pay their tax (combined income and old age security tax) in monthly instalments but the period during which they pay tax for a taxation year does not coincide with that taxation year. In each of the last eight months of their taxation year and in the following two months they pay one twelfth of their estimated tax for the year (such estimate is based on the taxable income of the previous year or the estimated taxable income of the year in progress). In each of the following two months, they pay one half of the estimated balance of the tax computed by reference to the income of the taxation year. In the sixth month following the end of their taxation year, the final return must be filed.

### Special Refundable Tax on the Cash Profits of Corporations†

The 1966 Budget announced a temporary tax of 5 p.c. on the cash profits of corporations payable monthly over an 18-month period commencing in May 1966. The amounts collected under the measure will be repaid with interest at 5 p.c. after an interval of 18 to

\* This concession for new manufacturing or processing businesses is also available to individuals.

† This tax is also payable on business and rental income of trusts.



36 months from receipt. The monthly payments are to be made on an estimated base computed by reference to the present or immediately preceding taxation year, subject to adjustment at the end of the year.

The base for the tax is the taxable income of the corporation less federal and provincial taxes payable thereon, less a basic exemption of \$30,000, less principal payments due and made on debt of the corporation having original term of three years or more and having been contracted for under written arrangements in existence on Mar. 29, 1966 (this deduction is subject to certain limits), plus certain amounts that were deducted in arriving at taxable income but that do not deplete the cash position of the corporation (such as capital cost allowances and depletion).

### **Taxation of Non-residents**

A non-resident is liable for payment of income tax if he was employed or was carrying on business in Canada during a taxation year. The expression "carrying on business in Canada" includes (1) maintaining a permanent establishment in Canada, (2) processing goods even partially in Canada, and (3) entering into contracts in Canada. The taxable income of a non-resident individual thus derived is taxed under the same schedule of rates as Canadian resident individuals, and non-resident corporations deriving income from carrying on business in Canada are taxed on their taxable income attributable to operations in Canada at the same rates as Canadian resident corporations. (Tax treaties with some countries provide certain exemptions from tax for remuneration for services performed in Canada by residents or employees of these countries. They also prohibit Canada taxing profits of a non-resident enterprise unless that enterprise has a permanent establishment in Canada.)

Furthermore, the Income Tax Act imposes a tax at the rate of 15 p.c. on certain forms of income going from Canada to non-resident persons. It applies to interest (other than interest on government bonds issued after Apr. 15, 1966), dividends, rentals, royalties, income from a trust or estate and alimony, and applies whether the income goes to non-resident individuals or to corporations. The rate is reduced to 10 p.c. in the case of dividends paid by a company that has a degree of Canadian ownership and is also 10 p.c. on royalties from motion picture films. This non-resident tax is withheld at the source by the Canadian payer. Non-residents who receive only this kind of income from Canada do not file returns in Canada.

Profits earned in Canada by a non-resident corporation carrying on business through a branch or permanent establishment in Canada are taxed at the regular rates of corporation income tax and are also subject to an additional tax of 15 p.c. This additional tax is imposed on profits attributable to the branch after deducting therefrom Canadian federal and provincial income taxes and an allowance in respect of the net increase in capital investment in property in Canada.

### **Gift Tax**

The Income Tax Act levies a tax upon gifts. The rates range from 10 p.c. on an aggregate taxable value of \$5,000 or under to 28 p.c. on an aggregate taxable value of over \$1,000,000. Exemptions include complete exemption of gifts of \$1,000 or less per donee and a general deduction of \$4,000 from aggregate taxable value of gifts made in the year.

### **Estate Tax**

This tax applies to property passing, or deemed to pass, at death. All the property of persons who were domiciled in Canada before their death must be taken into consideration no matter where that property is situated; for persons dying domiciled outside of Canada only their property situated in Canada is subject to tax.

In computing the tax of a Canadian domiciliary, the value of the whole estate is first determined. Once the aggregate value of the estate has been determined, estate debts and certain expenses may be deducted. From the resulting "aggregate net value" there

may be deducted the amount of a basic exemption, which is increased where the deceased leaves a widow or dependent child, and also the amount of any charitable bequests to charitable organizations in Canada. After these deductions the amount left is the "aggregate taxable value" to which is applied the tax rates. From the tax so calculated may be deducted (1) a tax abatement in respect of property situated in a province that levies a succession duty, (2) a credit for gift tax paid on gifts made within three years of death (the value of which must be included in the aggregate net value of the estate), and (3) a credit for foreign taxes.

No estate valued at less than \$50,000 is subject to estate tax. This \$50,000 is not an exemption but the starting point for tax. The estate tax must not reduce the value of an estate after tax to less than \$50,000. The basic deductible exemption which applies to all estates of Canadian domiciliaries is \$40,000. This basic exemption of \$40,000 is increased to \$60,000 in respect of a deceased male survived by a spouse, or in respect of a deceased female survived by an incapacitated spouse and a dependent child. In both cases, there is an additional exemption of \$10,000 for each surviving dependent child. Finally, the basic exemption of \$40,000 is increased by \$15,000 for every surviving dependent child made an orphan by the death of the deceased.

The tax on the estates of Canadian domiciliaries is calculated by applying a graduated scale of rates. For an aggregate taxable value of \$5,000, or less, the rate is 10 p.c. For an aggregate taxable value of \$100,000, the tax is \$19,000 and anything between \$100,000 and \$150,000 is taxed at 24 p.c. At \$2,000,000 of taxable value, the tax is \$816,500 and the excess over \$2,000,000 is chargeable at the highest rate of 54 p.c.

The property situated in Canada of a deceased person not domiciled in Canada is subject to estate tax at a flat rate of 15 p.c. No deduction is allowed against the assessed value of such property except for debts specifically chargeable to it. However, there is a special provision that exempts all such property of less than \$5,000 value and also provides that the tax must not reduce the value of the property to less than \$5,000. (The Estate Tax Convention between Canada and the United States increases this figure to \$15,000.) As stated previously, there is an abatement from federal estate taxes otherwise payable, in respect of property situated in a province that levies succession duties. Where property is subject to provincial duties, the 15-p.c. tax is abated by 75 p.c. (At present this abatement is only 50 p.c. in Ontario and Quebec.\*)

### Excise Taxes

The Excise Tax Act levies a general sales tax and special excise taxes. Both the sales tax and the special excise taxes are levied on goods imported into Canada and on goods produced in Canada. They are not levied on goods exported. The sales tax, which is at the rate of 8 p.c.,<sup>†</sup> is levied on the manufacturer's sale price of goods produced or manufactured in Canada or on the duty-paid value of goods imported into Canada. For alcoholic beverages and tobacco products, the sale price for purposes of the sales tax includes excise duties levied under the Excise Act (see p. 1028). An old age security tax of 3 p.c. is levied on the same basis as the 8-p.c.<sup>†</sup> tax, bringing the total sales tax to 11 p.c.<sup>†</sup>

Many classes of goods are exempt from sales tax. Foodstuffs, electricity and fuels for lighting or heating are generally exempt as well as articles and materials used by public hospitals. The products of farms, forests, mines and fisheries are, to a large extent, exempt as well as most equipment used in farming and fishing. Materials consumed or expended in production are not taxed. Also, a variety of items are exempt from sales tax when purchased by municipalities. These and other exemptions are set forth in schedules to the Excise Tax Act.

The 1966 Budget announced that machinery and equipment used directly in the manufacture or production of goods would be relieved of tax over a two-year period. Effective Mar. 30, 1966, full exemption is extended to dies, moulds, jigs, fixtures and the cutting or

\* See footnote†, p. 1020.

† Raised in December 1966 to 9 p.c., effective Jan. 1, 1967, bringing total sales tax to 12 p.c.

shaping parts of machines. On Apr. 1, 1967, a comprehensive list of other production machinery and equipment will become subject to a reduced rate of 6 p.c. and on Apr. 1, 1968, the same goods will be granted full exemption from the levy.

A number of articles are subject to special excise taxes in addition to the sales tax. Where these are ad valorem taxes they are levied on exactly the same price or duty-paid value as the general sales tax. Those levied at present are as follows:—

Cigarettes.....	2½ cents per 5 cigs.
Cigars.....	15 p.c. ad valorem
Jewellery, including clocks, watches, articles of ivory, amber, shell, precious or semi-precious stones, goldsmiths' and silversmiths' products except gold-plated or silver-plated ware for the preparation or serving of food or drink.....	10 p.c. ad valorem
Lighters.....	10 cents per lighter
Playing cards.....	20 cents per pack
Radios.....	the greater of \$2 per radio or 15 p.c. ad valorem
Phonographs and television sets.....	15 p.c. ad valorem
Tubes for radios, phonographs and television sets, not including television picture tubes, priced under \$5 per tube.....	10 cents per tube
Television set picture tubes.....	15 p.c. ad valorem
Slot machines—coin, disc or token-operated games or amusement devices..	10 p.c. ad valorem
Matches.....	10 p.c. ad valorem
Tobacco—pipe tobacco, cut tobacco and snuff.....	80 cents per lb.
Tobacco pipes, cigar and cigarette holders and cigarette rolling devices....	10 p.c. ad valorem
Toilet articles, including cosmetics, perfumes, shaving creams, antiseptics, etc.....	10 p.c. ad valorem
Wines—*	
Wines of all kinds containing not more than 7 p.c. absolute alcohol by volume.....	25 cents per gal.
Non-sparkling wines containing more than 7 p.c. absolute alcohol by volume but not more than 40 p.c. proof spirit.....	50 cents per gal.
Sparkling wines.....	\$2.50 per gal.
Insurance premiums paid to British or foreign companies not authorized to transact business in Canada or to non-resident agents of authorized British or foreign companies.....	10 p.c. of net premium for property, surety, fidelity and liability insurance. (Most other kinds of insurance are exempt.)

All the foregoing items, except the last, are also subject to the general sales tax of 8 p.c. and the old age security tax of 3 p.c. Cigarettes, cigars and tobacco are subject to further taxes, referred to as excise duties (see below).

### Excise Duties

The Excise Act levies taxes (referred to as excise duties) upon alcohol, alcoholic beverages and tobacco products produced in Canada. The customs tariff on such products imported into Canada includes a levy to correspond with the duties levied on domestic production. These duties are not levied on goods exported.

*Spirits.*—The duties are on a per-gallon basis in proportion to the strength of proof of the spirits. These duties do not apply to denatured alcohol intended for use in the arts and in industry, or for fuel, light or power, or for any mechanical purpose. The various duties are as follows:—

On every gallon of the strength of proof distilled in Canada.....	\$13.00
On every gallon of the strength of proof used in the manufacture of—	
Medicines, extracts, pharmaceutical preparations, etc.....	\$1.50 per gal.
Approved chemical compositions.....	15 cents per gal.
Spirits sold to a druggist and used in the preparation of prescriptions...	\$1.50 per gal.
Imported spirits when taken into a bonded manufactory in addition to other duties.....	30 cents per gal.

\* Applicable only to wines manufactured in Canada. The customs tariff on wines includes a levy to correspond with these taxes on domestic production.



*Canadian Brandy.*—Canadian brandy, a spirit distilled exclusively from juices of native fruits without the addition of sweetening materials, is subject to a duty of \$11 per gallon.

*Beer.*—All beer or other malt liquor is subject to a duty of 38 cents per gallon.

*Tobacco, Cigars and Cigarettes.*—The excise duties make up nearly as large a part of the total tax on tobacco products as the special excise taxes already described. The rates are as follows:—

On manufactured tobacco of all descriptions, except cigarettes.....	35 cents per lb.
Cigarettes weighing not more than 3 lb. per thousand (nearly all of the cigarettes used in Canada are of this type).....	\$4.00 per thousand
Cigarettes weighing more than 3 lb. per thousand.....	\$5.00 per thousand
Cigars.....	\$2.00 per thousand
Canadian raw leaf tobacco when sold for consumption.....	10 cents per lb.

### Combined Effect of Excise Taxes and Excise Duties on Tobacco Products

Bringing together the taxes imposed on tobacco products under the Excise Tax Act and the duties imposed under the Excise Act gives the following total taxes:—

Cigarettes.....	\$9.00 per thousand (or 18 cents per pack of 20 cigarettes) plus the 11-p.c. sales tax on the manufacturer's sale price
Manufactured tobacco.....	\$1.15 per lb. plus the 11-p.c. sales tax on the manufacturer's sale price
Cigars.....	\$2.00 per thousand plus the 15-p.c. special excise tax and the 11-p.c. sales tax on the manufacturer's sale price.

### Customs Duties\*

Most goods imported into Canada are subject to customs duties at various rates as provided by tariff schedules. Customs duties, which once were the chief source of revenue for the country, have declined in importance as a source of revenue to the point where they now provide less than 10 p.c. of the total. Quite apart from its revenue aspects, however, the tariff still occupies an important place as an instrument of economic policy.

The Canadian Tariff consists mainly of three sets of rates, namely, British Preferential, Most-Favoured-Nation and General. The British Preferential rates are, with some exceptions, the lowest rates. They are applied to imported dutiable commodities shipped directly to Canada from countries within the Commonwealth. Special rates lower than the ordinary preferential duty are applied on certain goods imported from designated Commonwealth countries.

The Most-Favoured-Nation rates apply to goods from countries that have been accorded tariff treatment more favourable than the General Tariff but which are not entitled to the British Preferential rate. Canada has Most-Favoured-Nation arrangements with almost every country outside the Commonwealth. The most important agreement providing for the exchange of Most-Favoured-Nation treatment is the General Agreement on Tariffs and Trade.

The General Tariff applies to imports from countries not entitled to either the Preferential or Most-Favoured-Nation treatment. Few countries are in this category and in terms of trade coverage are negligible.

In all cases where the tariff applies there are provisions for drawbacks of duty on imports of materials used in the manufacture of products later exported. The purpose of these drawbacks is to assist Canadian manufacturers to compete with foreign manufacturers of similar goods. There is a second class of drawbacks known as "home consumption" drawbacks. These apply to imported materials used in the production of specified classes of goods manufactured for home consumption.

The tariff schedules are too lengthy and complicated to be summarized here but the rates that apply on any particular item may be obtained from the Department of National Revenue, which is responsible for administering the Customs Tariff.

\* See also pp. 1000-1010.

### Subsection 2.—Provincial Taxes

All of Canada's ten provinces impose a wide variety of taxes to raise the revenue necessary for provincial purposes. All provinces levy a tax on the income of individuals and corporations resident within their boundaries or deriving income from activities or operations carried out therein. Only the Provinces of Ontario and Quebec impose special taxes on corporations in addition to income tax and only the Provinces of Ontario, Quebec and British Columbia impose a tax on property passing at death; the remaining provinces receive payment from the Federal Government of their 75-p.c. share of estate tax levies. Under the terms of the existing Federal-Provincial Fiscal Arrangements, the Federal Government makes "equalization payments" to some provinces in recognition of the fact that the actual tax revenue from the fields of income tax, death duties and natural resource revenue in those provinces, measured on a per capita basis, is lower than the average per capita yield from these taxes in the two provinces where they produce the highest yield. However, resource revenues are treated as a negative adjustment; for those provinces that have above-average per capita revenues from resource revenues, a deduction is made in the equalization payment equal to 50 p.c. of the excess above the national average. For some provinces the equalization payments constitute a very important source of revenue.

Some of the more important provincial levies are reviewed briefly on the following pages.

#### Individual Income Tax

All provinces levy a tax on the income of individuals who reside within their boundaries or who earn income therein. In nine of the ten provinces, these taxes are computed as a percentage of federal "basic tax". As previously explained, "basic tax" is federal income tax (excluding old age security tax) otherwise payable at full federal rates before the abatement under the Federal-Provincial Fiscal Arrangements and before allowance for the federal tax reduction passed in 1966. These provincial taxes are collected by the Federal Government on behalf of these provinces. In Quebec, provincial income tax is levied at graduated rates that progress from 5.2 p.c. on the first \$1,000 of taxable income to a maximum of 37.6 p.c. on the excess over \$400,000. The determination of taxable income for Quebec tax is based on exemptions and deductions similar to those for federal tax. The Province of Quebec collects its own tax.

The percentages that provincial income tax liability is of federal "basic tax" for 1966 are: Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Alberta and British Columbia each 24 p.c., Quebec approximately 47 p.c., and Manitoba and Saskatchewan each 29 p.c.

#### Corporate Income Tax

All provinces levy a tax on the profits of corporations derived from activities carried out within their boundaries. In all provinces except Ontario and Quebec the provincial tax imposed on taxable income in the province is determined on the same basis as for federal income tax. In Ontario and Quebec the determination of taxable profits for purposes of provincial tax follows closely the federal rules. The rate of tax in Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Alberta and British Columbia is 9 p.c. of corporate taxable income. The rate that applies in Manitoba and Saskatchewan is 10 p.c., in Ontario 11 p.c. and in Quebec 12 p.c.

Four of the ten provinces levy corporate income taxes at rates in excess of the abatement allowed by the Federal Government. This abatement is equal to 9 p.c. of corporate profits except in Quebec where it is 10 p.c. (see p. 1020). All provinces except Ontario and Quebec have signed agreements for the collection of their income taxes by the Federal Government.

#### Taxes on Alcoholic Beverages and Tobacco

Generally speaking, the sale of spirits in all provinces is made through provincial agencies operating as boards or commissions which exercise monopolistic control over

alcoholic beverages. The provincial mark-up over the manufacturer's price is the effective means of revenue. Beer and wine may be sold by retailers or government stores depending on the province but in all cases they contribute to provincial revenues.\* The Province of Prince Edward Island imposes a tax of 10 p.c. on all beer, wine and spirits sold at retail, collected under authority of the Health Tax Act.

Newfoundland imposes a tax on tobacco sold at retail of one quarter of one cent per cigarette purchased; from one to five cents per cigar, depending on price; and one cent per half ounce or less of other tobacco. Prince Edward Island's tax on tobacco sold at retail is one fifth of one cent per cigarette purchased; from one to three cents per cigar, depending on price; and 10 p.c. of the retail price of all other tobacco purchased. Saskatchewan's tax on retail tobacco sales is one fifth of one cent per cigarette purchased; from one to five cents per cigar, depending on price; and one cent on every half ounce of other tobacco; the average rate of the tobacco tax is 10 p.c. Specific sales taxes on tobacco products are also levied in New Brunswick, Quebec, Manitoba, and Ontario.

### Retail Sales Taxes

Retail sales taxes are levied on the final purchaser or user and are collected by the retailer. Eight provinces now levy this type of tax at rates varying from 3 p.c. to 6 p.c. These provinces are Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Ontario, Saskatchewan and British Columbia. These direct levies apply to tangible taxable commodities sold, with varying exemptions, for consumption in the province and to a few selected services, for example, to local telephone services in all provinces except Saskatchewan and to telecommunications and hotel and motel charges in Quebec.

### Amusement Taxes

Each of the provinces with the exception of Alberta, Saskatchewan, British Columbia and Quebec has a tax on admission to places of entertainment. In addition, there is generally a licence fee imposed on the operator or owner of these amusement places. The tax on admissions is within the range of 5 p.c. to 15 p.c.

### Gasoline and Diesel Fuel Oil Taxes

Each of the ten provinces imposes a tax on the purchase of gasoline by motorists and truckers. The rates vary from 12 cents per gallon in Alberta to 19 cents in Nova Scotia and Newfoundland. The amount of tax borne by one gallon of motor vehicle fuel in each province is as follows:—

	Gasoline	Diesel Fuel		Gasoline	Diesel Fuel
	cts.	cts.		cts.	cts.
Newfoundland.....	19	19	Ontario†.....	16	22
Prince Edward Island‡	18	18	Manitoba.....	17	20
Nova Scotia.....	19	27	Saskatchewan....	15	18½
New Brunswick.....	18	23	Alberta.....	12	14½
Quebec.....	16	22	British Columbia	13	15

The British Columbia net tax rate (after refund) on gasoline used in logging trucks off highway, in power units of motor vehicles for stationary industrial use, and in vehicles used by amputees, paraplegics and certain war amputees is 1 cent per gallon. Gasoline coloured purple for certain off-highway use (including marine) and motor fuels, being any fuel except gasoline not consumed on provincial highways, is also taxed at 1 cent per gallon. Fuel oil used for heating purposes is taxed at ½ cent per gallon.

\* The provincial mark-up over the manufacturer's price is not considered a "tax" in DBS financial statistics, but forms part of the "profits of government business enterprises".

† Gasoline and diesel fuel used by primary producers—farmers, fishermen, manufacturers and processors—is exempt from tax as is also gasoline and motor fuel used by owners or operators of registered pleasure craft.

‡ Some relief from taxation is given where gasoline or fuel oil is used for farming, manufacturing, commercial fishing and other off-highway purposes.

§ Generally, fuel oil used for agricultural and industrial purposes is exempt from tax.



### Motor Vehicle Licences and Fees

Each province levies a fee on the annual registration of motor vehicles, which is compulsory. Upon registration a vehicle is issued with licence plates. The rates of fee vary from province to province and, in the case of passenger cars, may be assessed on the weight of the vehicle, the wheel base, the year of manufacture, the number of cylinders of the engine, or at a flat rate. The fees for commercial motor vehicles and trailers are based on the gross weight for which the vehicle is registered, i.e., the weight of the vehicle empty plus the load it is permitted to carry. Every operator or driver of a motor vehicle is required to obtain a driver's licence and pay a fee therefor. The licences are valid for periods of from one to five years and the fees vary from \$1 to \$6 a year.

### Taxes on Mining Operations

All provinces except Prince Edward Island levy taxes of various kinds on mining operations. All provinces except Prince Edward Island and Alberta impose a tax on the income of firms engaged in mining operations in general or in specific kinds of mining operations. The Provinces of British Columbia, Alberta, Saskatchewan, Manitoba and Ontario impose a tax on the assessed value of minerals or a flat rate per acre of mining property. Manitoba imposes rates of from 6 p.c. to 11 p.c. on mining royalties.

### Tax on Logging Operations

The Provinces of Ontario, Quebec and British Columbia levy a tax on the income from logging operations of individuals, partnerships, associations or corporations engaged in this activity. In Quebec and Ontario the rate is 10 p.c. on net income where in excess of \$10,000 and in British Columbia the tax is 10 p.c. on net income where in excess of \$25,000. In Ontario and Quebec one third and in British Columbia 18 p.c. of the tax is allowed as a deduction from provincial corporate income tax or, in Quebec, from the provincial income tax, and the remainder is deductible from federal income tax.

### Business Taxes

The Province of Quebec imposes a tax of one tenth of 1 p.c. on paid-up capital of corporations and Ontario levies a similar tax at the rate of one twentieth of 1 p.c.

The Provinces of Quebec and Ontario have a place-of-business tax. In Quebec, the tax is generally \$50; it is reduced to \$25 when the paid-up capital is less than \$25,000; and in the case of loan companies, the tax is \$100 when capital paid up is \$100,000 or more. In Ontario, the tax for each permanent establishment is the lesser of \$50 or one twentieth of 1 p.c. of paid-up capital of the corporation involved, but the total of the capital tax and the place-of-business tax cannot be less than \$20. Ontario also imposes an office tax of \$50 on every corporation that does not maintain a permanent establishment in the province but merely maintains a buying office, or merely holds certain provincial licences, or merely holds assets. A corporation that does not maintain a permanent establishment in Ontario but is represented by a resident employee or agent who is not deemed to operate a permanent establishment of the corporation in the province must pay an office tax of \$50 or one tenth of 1 p.c. of the total amount of its gross Ontario sales or revenue if less than \$50,000, subject to a minimum office tax of \$5.

Both provinces levy special taxes on certain kinds of companies such as banks, railway companies, express companies, trust companies and sleeping-car, parlour-car and dining-car companies. In Ontario, these special taxes (except the tax payable by insurance corporations calculated on gross premiums) and the capital and place-of-business taxes are payable only to the extent that they exceed the corporate income tax otherwise payable.

The Province of Prince Edward Island charges special annual licence fees to most insurance companies, banks, acceptance companies, chain theatres and chain stores, steamship companies, telephone, telegraph and electric light companies and brokers, as well as nominal licence fees to other incorporated companies, the latter being similar to filing fees in other provinces.

## Land Transfer Taxes

The Provinces of Alberta and Ontario levy a tax based on the value of the consideration at which ownership of land is transferred. In Ontario, two fifths of 1 p.c. tax is imposed for land transfer that is \$25,000 or over; one fifth of 1 p.c. under \$25,000. Other provinces do not have a land transfer tax but most have a scale of charges or fees imposed upon registration of transfer of land. These fees are not regarded as taxes since a service is rendered or an assurance given with each charge.

## Tax on Security Transfers

The Provinces of Ontario and Quebec levy a tax on the sale price of securities transferred; the rates in each province are:—

Shares sold, transferred or assigned valued at—

Under \$1.....	1/10th of 1 p.c. of value
\$ 1 to \$ 5.....	$\frac{1}{2}$ cent per share
\$ 5 to \$ 25.....	1 cent per share
\$25 to \$ 50.....	2 cents per share
\$50 to \$ 75.....	3 cents per share
\$75 to \$150.....	4 cents per share
Over \$150.....	4 cents per share plus 1/10th of 1 p.c. of value in excess of \$150
Bonds and debentures.....	3 cents for every \$100 or fraction thereof of par value.

## Tax on Premium Income of Insurance Companies

All ten provinces impose a tax of 2 p.c. on the premium income of insurance companies relative to risks incurred in the province.

## Succession Duties

Only the Provinces of Ontario, Quebec and British Columbia levy succession duties. These duties are a tax upon the right to succeed to property and are assessed upon the interest or benefit passing at death to an heir or beneficiary. The three provinces impose succession duties on all property situated in the province belonging to the deceased and passing at his death whether the deceased was domiciled in the province or elsewhere. Personal property wherever situated of a person dying domiciled within the province is also liable if passing to a successor resident or domiciled in the province.

The rates of succession duty are generally governed by the value of the estate, the relationship of the beneficiary to the deceased and the amount going to any one person. The rate of tax increases as the degree of relationship between the deceased and his successor becomes more remote.

Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Manitoba, Saskatchewan and Alberta, while not imposing succession duties, each receives 75 p.c. of Federal Government estate tax levies on property situated within its borders.

## Provincial Property Taxes

In unorganized (non-municipal) areas, British Columbia levies property taxes at varying rates according to class for provincial revenue. Improved, forest and tree-farm lands are taxed at 1 p.c. of assessed value; farm land at one half of 1 p.c.; wild land at 3 p.c.; coal land at 2 p.c. (non-operating) or 7 p.c. (operating); and timber land at  $1\frac{1}{2}$  p.c. In unorganized (non-municipal) areas, Ontario levies a property tax of  $1\frac{1}{2}$  p.c. of assessed value; the minimum annual tax in respect of any land is \$6. New Brunswick levies a tax of \$1.50 per \$100 market value assessment on all land and buildings in the province and a similar tax on business occupancy, to finance education, health, welfare and justice services. Nova Scotia also imposes property taxes of limited application.

### Race Track Taxes

Ontario levies a tax on operators of race meets and upon holders of winning tickets issued under the pari-mutuel system. The tax on race meeting operators is imposed at the rate of \$1 for each day the meet is conducted. Holders of winning tickets must pay a tax equal to 6 p.c. upon the amount which would be payable to them if no percentage were deducted by the person holding the race meeting. A number of other provinces levy a pari-mutuel tax on money bet in the province on horse races: in Newfoundland the rate is 11 p.c., in Prince Edward Island 10½ p.c., in New Brunswick 5½ p.c., in Manitoba 10 p.c., in Alberta and Saskatchewan 5 p.c., and in Quebec 7 p.c. on ordinary pools and 9 p.c. on special pools (quinella and daily-double). In British Columbia the tax is 12 p.c. but the province returns 2½ p.c. of money bet to horsemen and track operators for purses, etc.

### Subsection 3.—Municipal Taxes

The municipalities in Canada levy taxes on the owners of property situated within their jurisdiction according to the assessed value of such property. Methods of determining assessed value vary widely but for taxation purposes it is generally considered to be a percentage of the actual value or, as in Nova Scotia and throughout most of New Brunswick, of the actual market value. The revenues from such taxes are used generally to pay for street maintenance, schools, police and fire protection, snow removal in certain communities and other community services; in New Brunswick the municipal levy is used only for property service. Special levies are sometimes made on the basis of street frontage to pay for local improvements to the property such as sidewalks, roads and sewers. Not only is there a widespread difference in the bases used for property tax but there is also a wide variety of rates applied, depending on the municipality.

In addition to the taxes described above, municipalities usually impose a charge for the water consumption of each property holder or a water tax based upon the rental value of the property occupied. There are no municipal income taxes although certain localities have retained the use of a poll tax. In Newfoundland, Quebec and Saskatchewan, municipalities are empowered to levy an amusement tax on the admission of persons to places of entertainment, although the amusement tax is generally a provincial preserve (see p. 1031). Electricity and gas are taxed at the consumer level in some western municipalities and coal and fuel oil for heating purposes are chargeable in urban areas of Newfoundland. Telephone subscribers are subject to a special levy in Montreal and certain Ontario municipalities impose a tax on the gross receipts of telephone companies.

In most municipalities, a tax is levied directly on the tenant or the operator of a business. In general, business tax rates are lower than those applying to property. Three bases of assessment are in use—a fraction of the property assessment, the annual rental value of the premises, or the area of the premises. Certain municipalities may charge a licence fee instead of a business tax but others charge both a licence fee and a business tax.

### Subsection 4.—Miscellaneous Levies

These are not generally referred to as taxes but they are similar to taxes in many ways.

### Unemployment Insurance

For the past twenty-six years, a national program of unemployment insurance has been in operation in Canada. Essentially, it provides relief to those qualified persons who temporarily find themselves without work. It is administered by a federal commission appointed for this purpose and financed by equal contributions from employers and employees plus a contribution from the Federal Government. The amount paid into the fund by employee and employer is directly proportional to the weekly wages of the employee. The rates of contributions, together with statistics on the operation of the program, are given at pp. 769-771.



## Workmen's Compensation

Legislation in force in all provinces provides compensation for personal injury suffered by workmen as a result of industrial accidents. In general, these provincial statutes establish an accident fund administered by a Board to which employers are required to contribute at a rate proportional with the hazards of the industry. See also pp. 772-773.

## Hospital Insurance

A federal-provincial hospital insurance plan has been adopted by each of the ten Canadian provinces. Under this arrangement, the Federal Government pays approximately one half of the cost of hospitalization for patients who are participants under the plan. The provinces meet the remainder of the cost. Provincial revenues for this purpose are raised by various means. The Province of Quebec has increased its personal and corporation income tax. Certain provinces require the deduction of a monthly premium from the wages of their residents as a contribution or premium for the plan. In such provinces non-salaried people must also pay the premium directly if they wish to be covered by the plan. In some other provinces the proceeds of a retail sales tax are earmarked in whole or in part for the support of the hospital plan. See also pp. 281-284.

## Section 3.—Federal Government Finance

Subsection 1 of this Section contains financial statistics of the Federal Government prepared as far as possible in accordance with the classifications, concepts and definitions used in the preparation of provincial and municipal finance statistics. These tables differ from the information presented in Subsection 2 in that the latter has been extracted directly from the *Canada Gazette*. Detailed reports published by the Dominion Bureau of Statistics provide reconciliations of revenue, expenditure and debt as set out in Subsections 1 and 2. The *Canada Gazette* presentation is included because there is interest in and use for information on this basis.

### Subsection 1.—DBS Statistics of Federal Government Finance

**Revenue and Expenditure.**—Table 4 shows details of net general revenue of the Federal Government for the years ended Mar. 31, 1964 and 1965.

#### 4.—Details of Net General Revenue of the Federal Government, Years Ended Mar. 31, 1964 and 1965

Source	1964	1965 <sup>1</sup>	Source	1964	1965 <sup>1</sup>
	\$'000	\$'000		\$'000	\$'000
<b>Taxes—</b>			<b>Privileges, Licences and Permits—</b>		
<b>Income—</b>			Natural resources.....	5,232	4,627
Corporation <sup>1</sup> .....	1,374,708	1,669,065	Other.....	23,633	23,356
Individual.....	2,167,674	2,535,182	<b>Sales and services other than</b>		
On interest, dividends and			institutional.....	67,051	109,094
other income going abroad	124,500	143,718	Fines and penalties.....	1,548	1,984
General sales <sup>1</sup> .....	1,277,815	1,587,761	Exchange fund profits.....	62,594	19,639
Excise Duties and Special			Receipts from government en-		
Excise Taxes—			terprises.....	124,651	139,445
Alcoholic beverages.....	233,407	239,179	Bullion and coinage.....	10,625	15,032
Tobacco.....	390,636	394,627	Postal service.....	235,865	263,758
Other.....	41,721	45,437	Other revenue.....	13,228	14,650
Customs import duties.....	581,441	622,102	Non-revenue and surplus re-		
Estate taxes.....	90,671	88,626	ceipts.....	27,695	21,900
Other.....	219	140			
<b>Totals, Taxes.....</b>	<b>6,282,792</b>	<b>7,325,837</b>	<b>Totals, Net General</b>	<b>6,854,914</b>	<b>7,939,322</b>
			<b>Revenue.....</b>		

<sup>1</sup> Includes old age security taxes.

Table 5 gives details of the amounts paid by the Federal Government to provincial governments, territories and municipal corporations for the year ended Mar. 31, 1965 and Table 6 gives details of expenditure by function for the years ended Mar. 31, 1964 and 1965.

5.—Payments by the Federal Government to Provincial Governments, Territories and Municipal Corporations, Year Ended Mar. 31, 1965<sup>a</sup>

Payee and Purpose	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	All Provinces	Y.T.	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Provincial Governments and Territories</b>														
Federal-provincial financial arrangements.....	19,248	5,625	29,965	25,280	114,898	16,273	25,483	25,653	9,603	356	272,484	2,317 <sup>1</sup>	2,672 <sup>11</sup>	277,473
Share of income tax on power utilities.....	243	60	738	86	4,265	1,064	60	13	2,906	284	9,679	—	—	9,679
Subsidies.....	20,156 <sup>2</sup>	4,167 <sup>3</sup>	12,632 <sup>4</sup>	12,245 <sup>5</sup>	3,964	4,624	2,117	2,124	2,887	1,673	66,579	—	—	66,579
Totals, Above Items.....	39,647	9,842	43,335	37,681	123,127	21,961	27,650	27,790	15,396	2,313	348,742	2,317	2,672	353,731
<b>Grants-in-Aid and Shared-Cost Contributions—</b>														
Transportation—														
Trans-Canada Highway.....	22,765	1,108	4,714	8,046	32,049	3,690	208	39	96	3,370	76,085	—	—	76,085
Roads leading to resources.....	750	515	461	750	1,011	750	750	411	370	294	6,062	—	—	6,062
Other transportation.....	151	—	—	2,071	225	1,897	—	—	148	44	4,536	—	—	4,536
<b>Health—</b>														
Hospital insurance and diagnostic services.....	9,624	2,102	15,902	13,751	128,159	151,478	20,948	23,526	31,448	36,057	432,995	308	580	433,883
Hospital construction.....	545	38	916	914	5,962	6,978	1,048	911	2,523	1,633	21,468	—	44	21,512
<b>General Health Grants—</b>														
General public health.....	336	177	722	524	2,741	4,145	919	646	1,135	1,375	12,720	—	61	12,781
Tuberculosis control.....	159	28	137	122	1,331	836	171	144	210	238	3,376	14	3	3,393
Mental health.....	179	73	372	294	2,978	2,584	440	388	657	670	8,635	32	5	8,667
Professional training.....	101	13	44	60	823	451	78	87	135	136	1,928	—	—	1,933
Cancer control.....	13	15	64	109	660	836	—	160	237	353	2,547	—	—	2,550
Public health research.....	5	9	144	25	468	506	109	31	162	183	1,642	—	6	1,648
Medical rehabilitation and crippled children.....	110	13	102	92	768	640	130	77	76	262	2,270	—	2	2,272
Child and maternal health.....	55	7	83	45	515	396	61	70	82	95	1,409	—	—	1,409
Other health.....	2	1	23	2	194	232	44	18	26	32	574	—	—	574
<b>Social Welfare—</b>														
Old age assistance.....	2,221	509	2,303	2,303	16,589	10,465	2,329	2,294	2,901	2,991	44,905	14	72	44,991
Blind persons' allowances.....	300	51	510	457	1,893	1,179	259	256	312	372	5,589	3	33	5,625
Disabled persons' allowances.....	750	1,447	988	9,091	7,378	680	785	830	830	1,338	23,347	1	18	23,366
Unemployment assistance.....	4,704	281	1,863	1,414	41,016	21,051	5,399	4,586	9,211	17,858	107,383	72	98	107,553
Other social welfare.....	34	8	72	68	—	359	249	171	121	85	1,167	—	—	1,167
<b>Recreation—</b>														
Campground and picnic area developments.....	—	—	—	24	—	—	—	—	35	—	59	13	8	80
Fishes and amateur sport.....	37	56	38	53	—	57	64	30	41	40	416	15	19	450
Other recreation.....	—	—	—	933	—	6	—	—	—	17	976	222	19	1,217
<b>Education—</b>														
Technical and vocational training—														
Capital assistance to trade schools, etc.....	311	148	969	1,858	22,975	16,140	473	949	4,360	4,544	52,727	21	10	52,758

Technical high school training.....	—	11	47	150	260	1,794	538	161	166	214	238	3,568	7	—	4	3,575
Technician training.....	—	357	101	443	130	7,450	1,142	134	283	260	505	10,234	—	—	—	10,238
Apprenticeship training.....	—	37	—	46	1,370	5,866	1,374	288	662	2,778	1,522	14,291	73	35	—	14,389
Assistance to students.....	—	—	—	—	46	—	200	34	77	203	58	685	—	—	—	695
Training of unemployed workers.....	—	98	118	639	208	100	100	8	30	10	30	288	—	3	—	291
Training of disabled persons.....	—	9	6	101	39	1,862	7,954	666	299	621	1,044	13,499	83	18	—	13,600
Other.....	—	2	—	45	63	90	2,949	73	57	4	27	655	—	—	—	655
Citizenship and language instruction for immigrants.....	—	—	1	—	—	628	35	21	4	178	38	1,014	9	—	—	1,023
Other training.....	—	—	—	1	—	—	190	6	7	1	8	214	—	—	—	214
Natural Resources—	—	—	—	—	—	9,541	43	—	1	—	—	9,588	63	—	—	9,651
Registered trappers.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Construction of vessels.....	—	247	—	—	—	—	—	47	—	—	—	167	—	—	—	167
Forest inventories, reforestation, protection and improvement.....	—	267	40	231	700	1,909	1,665	454	371	1,010	1,823	8,470	—	—	—	8,470
Agricultural assistance (lime, 4-H clubs, farm labour agreements, rehabilitation and development, transport of fodder, etc., crop in- surance and other).....	—	265	168	334	368	4,498	657	1,148	2,482	562	261	10,743	—	—	—	10,743
Other.....	—	—	—	—	—	—	1,525	8,206	—	—	6	9,737	—	—	—	9,737
Civil defence.....	—	48	17	218	135	1,469	1,556	223	167	517	577	4,927	—	—	—	4,927
Winter works projects in municipalities	—	164	220	76	289	25,170	6,511	1,744	1,653	2,479	4,391	42,703	1	19	—	42,723
Grants to research councils.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals, Grants-in-Aid and Shared-Cost Contributions.....	44,657	6,239	33,473	38,616	330,001	255,973	47,572	41,903	63,755	82,215	—	944,400	977	1,326	—	946,712
<b>Totals, Paid to Provincial Governments and Territories.</b>	<b>84,304</b>	<b>16,081</b>	<b>76,508</b>	<b>76,287</b>	<b>453,128</b>	<b>277,934</b>	<b>75,222</b>	<b>69,698</b>	<b>79,151</b>	<b>84,528</b>	—	<b>1,293,151</b>	<b>3,294</b>	<b>3,998</b>	—	<b>1,300,443</b>
<b>Municipal Corporations</b>																
Grants in lieu of taxes on federal property	—	76	—	—	1,580	7,580	16,083	2,259	1,005	2,179	2,705	36,205	102	140	—	36,417
Special grants.....	—	—	—	—	1,800	—	47	—	—	—	—	1,847	—	—	—	1,847
Grants-in-Aid and Shared-Cost Con- tributions—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Transportation.....	—	438	—	361	6	1,039	4,449	302	9	387	154	7,145	—	—	—	7,145
Health.....	—	41	—	42	43	55	6,086	429	206	110	266	7,286	—	—	—	7,286
Schools operated by local authorities.	—	—	—	133	50	—	457	308	364	110	812	2,254	—	—	—	2,254
Slum clearance.....	—	—	—	268	778	2,367	530	—	—	—	509	4,790	—	—	—	4,790
Other.....	—	—	3	—	74	—	1,450	114	166	542	197	2,546	—	8	—	2,554
Totals, Paid to Municipal Cor- porations.....	555	132	3,491	3,821	9,452	30,939	3,942	1,750	3,328	4,643	—	62,653	102	148	—	63,303
<b>Grand Totals.....</b>	<b>84,859</b>	<b>16,213</b>	<b>80,299</b>	<b>80,118</b>	<b>462,580</b>	<b>308,873</b>	<b>79,164</b>	<b>82,479</b>	<b>89,171</b>	<b>1,355,204</b>	—	<b>1,355,204</b>	<b>3,396</b>	<b>4,146</b>	—	<b>1,362,746</b>

<sup>1</sup> Federal tax abatement grant.<sup>2</sup> Consists of Atlantic Provinces adjustment grant \$10,500, additional subsidy \$8,000 and annual statutory subsidies \$1,656.<sup>3</sup> Includes Atlantic Provinces adjustment grants: P.E.I. \$3,500; N.S. \$10,500; N.B. \$10,500.<sup>4</sup> Grant to City of Ottawa re interest on debentures issued to finance certain sewer and waterworks projects undertaken in advance of normal construction.



**6.—Details of Net General Expenditure of the Federal Government, Years Ended  
Mar. 31, 1964 and 1965**

Function	1964	1965 <sup>a</sup>	Function	1964	1965 <sup>a</sup>
	\$'000	\$'000		\$'000	\$'000
Defence services and mutual aid.....	1,719,008	1,564,205	Education—		
Veterans pensions and other benefits.....	335,902	356,246	Indian and Eskimo schools..	38,668	43,959
General Government—			Universities, colleges and other schools.....	163,679	130,740
Executive and administrative.....	259,238	235,066	Other.....	3,979	41,014
Legislative.....	25,656	16,261	Totals, Education.....	206,326	215,713
Research, planning and statistics.....	13,808	15,896	Natural Resources and Primary Industries—		
Totals, General Government.....	298,702	267,223	Fish and game.....	24,662	27,750
Protection of Persons and Property—			Forests.....	19,004	21,572
Law enforcement.....	10,595	11,719	Land, settlement and agriculture.....	295,065	237,758
Corrections.....	26,045	38,162	Minerals and mines.....	49,957	58,595
Police protection.....	52,892	76,847	Water resources.....	10,269	13,979
Other.....	9,594	10,942	Other.....	22,275	20,977
Totals, Protection of Persons and Property.....	99,126	137,670	Totals, Natural Resources and Primary Industries.....	421,232	380,631
Transportation—			Trade and industrial development.....	18,937	50,480
Air.....	66,787	70,129	National Capital area planning and development.....	22,705	23,957
Road.....	81,565	130,804	Loss on foreign exchange.....	-330	-16
Rail.....	118,503	118,072	Debt Charges (excluding debt retirement)—		
Water.....	147,940	167,568	Interest.....	781,534	752,221
Other.....	3,650	4,142	Other.....	41,317	39,249
Totals, Transportation....	418,445	490,715	Totals, Debt Charges (excluding debt retirement)	822,851	791,470
Communications — telephone, telegraph and wireless.....	32,008	40,066	Payments to government enterprises.....	149,475	181,713
Health—			Payments to Provincial Governments—		
General.....	10,433	6,555	Fiscal arrangements.....	182,329	277,473
Public.....	40,505	44,850	Share of income tax on power utilities.....	9,868	9,679
Medical, dental and allied services.....	11,481	13,501	Subsidies.....	66,525	66,579
Hospital care.....	429,517	469,952	Grants to Municipal Governments in lieu of taxes.....	31,920	36,447
Totals, Health.....	491,936	534,858	Totals, Payments to Provincial and Municipal Governments <sup>2</sup> .....	290,642	390,178
Social Welfare—			Citizenship and immigration..	17,365	20,483
Aid to aged persons <sup>1</sup> .....	847,792	1,007,276	External affairs.....	25,258	28,333
Aid to blind persons.....	5,057	5,694	International co-operation and assistance.....	74,621	107,758
Aid to unemployed employables and unemployables..	127,577	191,326	Housing research and slum clearance.....	4,884	9,642
Family allowances.....	541,321	550,764	Civil defence.....	10,153	10,315
Labour.....	4,229	65,281	Postal service.....	241,942	268,975
National employment and unemployment insurance services.....	110,290	62,150	Royal Canadian Mint.....	2,675	2,661
Other.....	30,012	35,094	Other.....	147,866	145,906
Totals, Social Welfare.....	1,666,278	1,917,585	Non-expense and Surplus Payments.....	425	3,448
Recreational and Cultural Services—			Totals, Net General Expenditure.....	7,552,912	7,984,954
Archives, art galleries, museums and libraries.....	5,206	5,956			
Parks.....	17,465	18,213			
Other.....	11,829	20,565			
Totals, Recreational and Cultural Services.....	34,500	44,734			

<sup>1</sup> Includes pensions paid from the Old Age Security Fund. <sup>2</sup> Unconditional payments; grants for specific purposes are classified by function. See Table 5 for details of all grants to provincial governments and municipal corporations.

**Debt.**—In Table 7, direct debt represents total liabilities less sinking funds and indirect debt consists of guarantees of direct debt of other authorities by the Federal Government. Table 8 gives the gross bonded debt of the Federal Government and the average interest rates and terms of issue as at Mar. 31, 1962-65, together with place of payment.

**7.—Direct and Indirect Debt (less Sinking Funds) of the Federal Government as at Mar. 31, 1962-65**

Nature of Debt	1962	1963	1964	1965
	\$'000	\$'000	\$'000	\$'000
<b>Direct Debt</b>				
Funded Debt—				
Bonded debt.....	15,060,736	15,796,836	16,510,097	16,838,214
Less sinking funds.....	19,432	22,312	—	8,441
Net funded debt.....	15,041,304	15,774,524	16,510,097	16,832,773
Short-term treasury bills <sup>1</sup> .....	1,885,000	2,165,000	2,238,000	2,140,000
Accounts and other payables.....	1,104,607	1,468,897	1,447,585	1,213,170
Annuity, insurance and pension accounts.....	4,258,100	4,748,506	5,132,423	5,676,786
Other liabilities.....	363,403	416,767	430,498	481,700
<b>Totals, Direct Debt (less Sinking Funds).....</b>	<b>22,652,414</b>	<b>24,573,694</b>	<b>25,750,603</b>	<b>26,344,439</b>
<b>Indirect Debt</b>				
Guaranteed bonds or debentures.....	1,636,115	1,381,361	1,377,611	1,368,298
Less sinking funds.....	—	—	—	—
Net guaranteed bonds or debentures.....	1,636,115	1,381,361	1,377,611	1,368,298
Guaranteed bank loans.....	168,540	141,353	210,039	282,018
Guaranteed insured loans under National Housing Act, 1954..	3,640,000	4,123,000	4,499,000	4,934,000
Guarantees under Export Credits Insurance Act.....	291,700	333,646	378,096	468,644
Other guarantees.....	11,800	12,976	14,491	15,863
<b>Totals, Indirect Debt (less Sinking Funds)<sup>2</sup>.....</b>	<b>5,747,655</b>	<b>5,962,336</b>	<b>6,488,237</b>	<b>7,068,823</b>
<b>Totals, Direct and Indirect Debt (less Sinking Funds).....</b>	<b>28,400,069</b>	<b>30,566,030</b>	<b>32,238,840</b>	<b>33,413,262</b>
	\$	\$	\$	\$
Direct debt (less sinking funds) per capita.....	1,220	1,300	1,339	1,346
Indirect debt (less sinking funds) per capita.....	310	317	337	361

<sup>1</sup> Having a term of three or six months.

<sup>2</sup> Excludes deposits of chartered banks in Bank of Canada.

**8.—Gross Bonded Debt of the Federal Government, Average Interest Rate and Term of Issue, and Place of Payment as at Mar. 31, 1962-65**

Item	1962	1963	1964	1965
Bonded debt..... \$'000	15,060,736	15,796,836	16,510,097	16,838,214
Average interest rate..... p.c.	4.01	4.13	4.27	4.49
Average term of issue..... yrs.	12.19	13.38	13.09	13.29
<b>Place of Payment—</b>				
Canada..... \$'000	14,930,570	15,385,847	16,133,692	16,461,809
New York..... "	98,175	376,405	376,405	376,405
London (England)..... "	31,991	34,584	—	—

## Subsection 2.—Public Accounts Statistics of Federal Government Finance

The figures of Tables 9 and 11, giving details of revenue and of assets and liabilities, respectively, of the Federal Government for the fiscal years ended Mar. 31, 1964-66, and the figures of Table 10, giving details of Federal Government expenditure for the years ended Mar. 31, 1965 and 1966, are taken from the *Canada Gazette*. Because of reorganization in Federal Government Departments and the necessary changes in the *Public Accounts*, it is not possible to present data for previous years on a comparable basis. It should be noted that these figures relate, of course, to departments and agencies as they were organized before the passing of the Government Organization Act, which received Royal Assent on June 16, 1966.

### 9.—Revenue of the Federal Government, Years Ended Mar. 31, 1964-66

Revenue	1964	1965	1966
	\$	\$	\$
<b>Tax Revenue—</b>			
Customs import duties (net).....	581,441,461	622,101,883	685,519,390
Excise duties.....	393,326,182	411,402,145	445,885,434
Income tax.....	3,248,530,746	3,770,814,463	3,919,095,260
Personal <sup>1</sup> .....	1,865,073,635	2,103,281,917	2,112,466,230
Corporation <sup>1</sup> .....	1,253,957,490	1,523,814,601	1,606,620,322
On dividends, interest, etc., going abroad.....	124,499,621	143,717,945	170,018,703
Sales tax (net) <sup>1</sup> .....	946,054,797	1,204,609,934	1,395,128,921
Estate tax, including succession duties.....	90,671,283	88,625,641	108,352,377
Other taxes.....	273,507,313	269,222,184	296,338,710
<b>Totals, Tax Revenue.....</b>	<b>5,533,531,782</b>	<b>6,366,776,250</b>	<b>6,850,320,092</b>
<b>Non-tax Revenue—</b>			
Post Office (net).....	200,717,142	230,435,714	237,482,296
Return on investments.....	366,412,592	422,693,741	438,254,129
Bullion and coinage.....	9,717,080	12,298,922	11,217,545
Other.....	142,825,443	148,105,160	153,546,142
<b>Totals, Non-tax Revenue.....</b>	<b>719,672,257</b>	<b>813,533,537</b>	<b>845,500,112</b>
<b>Grand Totals, Revenue.....</b>	<b>6,253,204,039</b>	<b>7,180,309,787</b>	<b>7,695,820,204</b>

<sup>1</sup> Excludes tax credited to the Old Age Security Fund.

### 10.—Expenditure of the Federal Government, Years Ended Mar. 31, 1965 and 1966

Expenditure	1965	1966
	\$	\$
<b>Defence Expenditures.....</b>	<b>1,585,643,748</b>	<b>1,594,981,383</b>
National Defence.....	1,537,834,863	1,548,446,784
Defence Production.....	27,308,885	22,636,820
Technological assistance to Canadian defence industry.....	20,500,000	23,897,779
<b>Non-defence Expenditures.....</b>	<b>5,632,630,804</b>	<b>6,139,814,142</b>
Agriculture.....	165,723,844	186,263,616
Atomic Energy Control Board.....	1,407,455	1,784,132
Atomic Energy of Canada Limited research program.....	45,157,338	52,666,043
Auditor General.....	1,589,889	1,741,901
Board of Broadcast Governors.....	367,645	382,787
Canadian Broadcasting Corporation.....	87,969,198	97,458,915
Central Mortgage and Housing Corporation.....	14,952,238	21,571,958



## 10.—Expenditure of the Federal Government, Years Ended Mar. 31, 1965 and 1966—concluded

Expenditure	1965	1966
	\$	\$
<b>Non-defence Expenditures—concluded</b>		
Chief Electoral Officer.....	578,175	12,953,140
Citizenship and Immigration.....	180,996,919	238,567,080
Civil Service Commission.....	6,226,358	7,986,854
Defence Production.....	3,172,452	8,545,621
Dominion Bureau of Statistics.....	13,493,107	15,591,823
External Affairs.....	131,186,586	152,545,955
Finance.....	1,622,642,345	1,850,679,433
Administration and general.....	8,272,365	10,068,773
Public debt charges.....	1,051,290,597	1,110,857,197
Fiscal, tax-sharing, subsidy and other payments to provinces.....	553,357,022	465,993,282
Other.....	204,722,361	263,770,181
Fisheries.....	25,593,261	34,526,476
Forestry.....	49,754,438	57,134,577
Governor General and Lieutenant-Governors.....	648,703	690,556
Industry.....	3,288,581	5,403,370
Insurance.....	1,445,862	1,512,059
Justice.....	10,644,700	11,367,814
Labour.....	23,402,111	23,993,711
Legislation.....	14,214,867	14,711,823
Mines and Technical Surveys.....	94,324,195	107,357,514
National Film Board.....	6,353,633	6,891,335
National Gallery of Canada.....	1,303,734	1,815,626
National Health and Welfare.....	1,300,598,426	1,175,122,029
Administration and general.....	2,238,438	2,505,929
Health services.....	498,319,599	372,717,431
Medical services.....	32,526,787	37,506,364
Food and drug services.....	4,320,933	5,560,491
Welfare services.....	763,192,669	757,031,814
National Research Council including Medical Research Council.....	56,641,725	74,387,029
National Revenue.....	86,908,544	94,971,980
Northern Affairs and National Resources.....	127,806,117	156,433,733
Post Office.....	210,458,702	240,206,458
Privy Council.....	8,175,312	8,981,878
Public Archives and National Library.....	1,507,268	1,973,514
Public Printing and Stationery.....	2,732,686	3,053,651
Public Works.....	234,411,993	275,147,218
Secretary of State.....	22,968,275	25,887,786
Solicitor General.....	115,476,877	138,834,027
Trade and Commerce.....	41,303,543	30,481,965
Transport.....	470,813,295	532,498,872
Unemployment Insurance Commission.....	94,792,046	98,037,727
Veterans Affairs.....	352,098,361	369,652,156
<b>Grand Totals, Expenditures.....</b>	<b>7,218,274,552</b>	<b>7,734,795,525</b>

**11.—Statement of Assets and Liabilities of the Government of Canada, as at  
Mar. 31, 1964-66**

Item	1964	1965*	1966
	\$	\$	\$
<b>Assets</b>			
<b>Current Assets—</b>			
Cash.....	984,642,872	850,282,134	759,080,004
Departmental Working Capital Advances and Revolving Funds.....	168,806,488	134,150,957	120,576,475
Securities held for the securities investment account at amortized cost.....	99,859,788	57,119,872	81,475,697
Other current assets.....	33,753,992	29,134,994	54,861,735
<b>Totals, Current Assets.....</b>	<b>1,287,063,140</b>	<b>1,070,687,957</b>	<b>1,015,993,911</b>
<b>Cash in blocked currency.....</b>	<b>—</b>	<b>—</b>	<b>1,002,400</b>
Advances to the Exchange Fund Account.....	2,601,000,000	2,621,000,000	2,696,000,000
Sinking fund and other investments held for retirement of un-matured debt.....	—	5,441,198	—
Investment in special United States of America securities—			
Columbia River Treaty.....	—	219,479,161	187,191,661
Canada Pension Plan Investment Fund.....	—	—	34,853,000
Loans to and Investments in Crown Corporations.....	4,584,194,507	4,914,534,120	5,540,921,255
Loans to national governments.....	1,195,684,799	1,288,343,607	1,343,365,960
<b>Other Loans and Investments—</b>			
Subscriptions to Capital of, and working Capital Advances and Loans to, International Organizations.....	702,130,003	709,753,536	724,695,231
Loans to provincial governments.....	113,651,578	98,435,807	96,723,106
Veterans' Land Act advances (less reserve for conditional benefits).....	216,970,307	231,322,169	256,191,461
Miscellaneous.....	165,064,212	99,869,916	185,602,890
<b>Totals, Other Loans and Investments.....</b>	<b>1,197,816,100</b>	<b>1,139,381,428</b>	<b>1,263,212,688</b>
<b>Securities held in trust.....</b>	<b>38,881,823</b>	<b>53,059,935</b>	<b>167,447,012</b>
<b>Deferred Charges—</b>			
Unamortized portions of actuarial deficiencies—			
Canadian forces superannuation account.....	—	53,761,600	53,601,200
Public service superannuation account.....	276,661,000	39,920,800	93,620,600
Royal Canadian Mounted Police superannuation account.....	—	4,153,600	3,115,200
Unamortized loan flotation costs.....	123,699,586	110,749,442	106,217,789
<b>Totals, Deferred Charges.....</b>	<b>400,360,586</b>	<b>208,585,442</b>	<b>256,554,789</b>
<b>Suspense accounts.....</b>	<b>141,392</b>	<b>—</b>	<b>—</b>
<b>Capital assets.....</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Inactive loans and investments.....</b>	<b>94,824,381</b>	<b>94,824,381</b>	<b>94,824,381</b>
<b>Total Recorded Assets.....</b>	<b>11,399,966,729</b>	<b>11,615,337,230</b>	<b>12,601,367,058</b>
<b>Less: Reserve for losses on realization of assets.....</b>	<b>-546,384,065</b>	<b>-546,384,065</b>	<b>-546,384,065</b>
<b>Net recorded assets.....</b>	<b>10,853,582,664</b>	<b>11,068,953,165</b>	<b>12,054,982,993</b>
<b>Net debt.....</b>	<b>15,070,149,452</b>	<b>15,504,472,544</b>	<b>15,543,447,865</b>
	<b>25,923,732,116</b>	<b>26,573,425,709</b>	<b>27,598,430,858</b>

**11.—Statement of Assets and Liabilities of the Government of Canada, as at  
Mar. 31, 1964-66—concluded**

Item	1964	1965 *	1966
	\$	\$	\$
<b>Liabilities</b>			
Current and Demand Liabilities—			
Outstanding treasury cheques.....	319,894,410	315,077,233	332,859,574
Accounts payable.....	342,673,020	363,925,315	380,308,616
Non-interest-bearing notes payable on demand.....	585,996,025	367,897,531	255,388,518
Matured debt outstanding.....	26,820,209	19,140,916	27,324,686
Interest due and outstanding.....	91,893,489	102,034,032	110,930,898
Interest accrued.....	215,973,372	231,173,522	254,292,555
Other current liabilities.....	35,710,909	33,367,648	37,731,247
Totals, Current and Demand Liabilities.....	1,619,961,434	1,432,616,197	1,398,836,094
Deposit and trust accounts.....	196,454,123	272,311,590	426,219,369
Annuity, Insurance and Pension Accounts—			
Government annuities.....	1,284,261,927	1,303,136,883	1,317,080,018
Canada Pension Plan Account.....	—	—	89,405,854
Old Age Security Fund.....	—	—	216,982,842
Canadian forces superannuation account.....	1,821,524,901	2,028,122,459	2,184,209,822
Public service superannuation account.....	1,856,407,623	2,161,828,359	2,390,383,090
Miscellaneous.....	168,859,360	182,753,152	194,071,319
Totals, Annuity, Insurance and Pension Accounts.....	5,131,053,811	5,675,840,853	6,392,132,945
Undisbursed Balances of Appropriations to Special Accounts—			
Colombo Plan Fund.....	..	..	..
Miscellaneous.....	..	..	..
Totals, Undisbursed Balances of Appropriations to Special Accounts.....	111,601,270	95,702,607	101,945,175
Deferred credits and suspense accounts.....	124,564,449	118,740,283	169,510,146
Unmatured Debt—			
Bonds—			
Payable in Canada.....	16,133,692,000	16,461,809,150	16,588,787,500
Payable in London.....	—	—	—
Payable in New York.....	376,405,029	376,405,029	370,999,629
Treasury Bills and Notes—			
Payable in Canada.....	2,230,000,000	2,140,000,000	2,150,000,000
Totals, Unmatured Debt.....	18,740,097,029	18,978,214,179	19,109,787,129
<b>Totals, Liabilities.....</b>	<b>25,923,732,116</b>	<b>26,573,425,709</b>	<b>27,598,430,858</b>

**Guaranteed Debt.**—In addition to the direct debt already dealt with, the Government of Canada has assumed certain contingent liabilities. The major categories of this indirect or contingent debt are the guarantee of insured loans under the National Housing Act, the guaranteed bonds and debentures of the Canadian National Railways and the guarantee of deposits maintained by the chartered banks in the Bank of Canada. The remainder consists chiefly of guarantees of loans made by chartered banks to the Canadian Wheat Board, to farmers and to university students and of guarantees under the Export Credits Insurance Act.



## 12.—Guaranteed Debt of the Government of Canada, as at Mar. 31, 1965

SOURCE: *Public Accounts of Canada*

Item	Amount of Guarantee Authorized	Amount Outstanding in the Hands of the Public as at Mar. 31, 1965 <sup>1</sup>
	\$	\$
<b>Railway Securities Guaranteed as to Principal and Interest—</b>		
Canadian National Ry. Co. 3 per cent bonds due 1966.....	35,000,000	35,000,000
Canadian National Ry. Co. 2½ per cent bonds due 1967.....	50,000,000	50,000,000
Canadian National Ry. Co. 4½ per cent bonds due 1967.....	72,300,000	72,300,000
Canadian National Ry. Co. 5 per cent bonds due 1968.....	55,800,000	55,800,000
Canadian National Ry. Co. 2½ per cent bonds due 1969.....	70,000,000	70,000,000
Canadian National Ry. Co. 2½ per cent bonds due 1971.....	40,000,000	40,000,000
Canadian National Ry. Co. 5½ per cent bonds due 1971.....	190,561,500	190,561,500
Canadian National Ry. Co. 3½ per cent bonds due 1974.....	200,000,000	200,000,000
Canadian National Ry. Co. 2½ per cent bonds due 1975 <sup>2</sup> .....	6,486,486	6,486,486
Canadian National Ry. Co. 5 per cent bonds due 1977.....	84,150,000	84,150,000
Canadian National Ry. Co. 4 per cent bonds due 1981.....	300,000,000	300,000,000
Canadian National Ry. Co. 5½ per cent bonds due 1985.....	99,500,000	99,500,000
Canadian National Ry. Co. 5 per cent bonds due 1987.....	164,500,000	164,500,000
<b>Other Guarantees—</b>		
Deposits maintained by chartered banks in Bank of Canada.....	Unstated	897,218,288
Loans made by lenders under Part IV of the National Housing Act, 1954, for home extensions and improvements.....	25,000,000	15,863,475
Insured loans made by approved lenders under the National Housing Act, 1954.....	6,000,000,000	4,934,000,000 <sup>3</sup>
Insurance and guarantees issued or approved under Section 21 and 21A of the Export Credits Insurance Act.....	1,000,000,000	468,643,662
Loans made by chartered banks under the Farm Improvement Loans Act.....	76,182,536	63,945,589
Loans made by chartered banks under the Veterans Business and Pro- fessional Loans Act.....	10,400	10,400
Loans made by chartered banks and credit unions under the Canada Student Loans Act.....	40,000,000	37,459,073 <sup>4</sup>
Loans made by chartered banks and credit unions under the Fisheries Improvement Loans Act.....	2,376,375	250,477
Loans made by chartered banks under the Small Businesses Loans Act.....	37,455,472	10,582,576
Loans made by chartered banks to the Canadian Wheat Board.....	414,000,000	169,770,000

<sup>1</sup> In addition, the government has an indeterminate contingent liability in respect of rental guarantee contracts which in 1964 amounted to approximately \$14,629,600. Against this amount was a reserve of \$3,901,429 held by Central Mortgage and Housing Corporation.

<sup>2</sup> These contingent liabilities are expressed in Canadian dollars; they are payable solely in United States dollars and are converted on the basis of \$1 U.S. = \$1.08108 Canadian.

<sup>3</sup> As reported (in accordance with Sect. 45, National Housing Loan Regulations) by approved lenders at Dec. 31, 1964.

<sup>4</sup> Includes contingent liability in respect of payments to non-participating provinces.

Table 13 summarizes the national debt position during the period 1957-66 as to interest and amount outstanding. Details of unmatured debt and treasury bills outstanding and

information on new security issues of the Federal Government may be found in the *Public Accounts of Canada*. They are summarized by standard classification in DBS publication *Federal Government Finance, Revenue and Expenditure* (Catalogue No. 68-211).

### 13.—Summary of the Public Debt and Interest Payments Thereon, Years Ended Mar. 31, 1957-66

NOTE.—Comparable figures from 1867 are given in the corresponding table of previous Year Books beginning with the 1942 edition.

Year Ended Mar. 31—	Gross Debt	Net Active Assets	Net Debt	Net Debt per Capita <sup>1</sup>	Increase or Decrease of Net Debt during Year	Interest Paid on Debt	Interest Paid per Capita <sup>2</sup>
	\$	\$	\$	\$	\$	\$	\$
1957...	18,335,797,515	7,328,146,357	11,007,651,158	662.71	-272,717,806	520,189,398	32.35
1958...	18,418,541,848	7,372,267,958	11,046,273,890	646.74	38,622,732	539,207,260	32.46
1959...	20,246,773,669	8,568,383,809	11,678,389,860	667.99	632,115,970	606,615,887	35.52
1960...	20,986,367,010	8,897,173,007	12,089,194,003	676.51	410,804,143	735,630,175	42.08
1961...	21,602,836,960	9,165,721,865	12,437,115,095	681.93	347,921,092	756,664,228	42.34
1962...	22,907,814,464	9,679,677,419	13,228,137,045	712.34	791,021,950	802,919,207	44.02
1963...	24,799,279,690	10,879,509,718	13,919,769,972	736.65	691,632,927	881,598,898	47.47
1964...	25,923,732,116	10,853,582,664	15,070,149,452	783.39	1,150,379,480	954,543,790	50.52
1965 <sup>1</sup> ...	26,573,425,709	11,068,953,165	15,504,472,544	792.22	434,323,092	1,012,097,143	52.62
1966...	27,598,430,858	12,054,982,993	15,543,447,865	780.33	38,975,321	1,077,295,513	55.05

<sup>1</sup> Based on the official estimates of population for June 1 of the year indicated.  
estimates of population for June 1 of the year immediately preceding the one indicated.

<sup>2</sup> Based on the official

### Subsection 3.—Revenue from Taxation

The incidence of Federal Government taxation is dealt with in Section 2. This Subsection includes statistical data on revenue received from individual income tax, corporation tax, estate tax, excise duties and excise taxes; customs receipts constitute a single item in the *Public Accounts of Canada* and are not included here.

#### Individual and Corporation Income Tax

Statistics of income tax collections are gathered at the time the payments are made and are therefore up to date. Over 85 p.c. of individual taxpayers are wage or salary earners who have almost the whole of their tax liability deducted at the source by their employers. All other taxpayers are required to pay most of their estimated tax during the taxation year. Thus, the greater part of the tax is collected during the same year in which the related income is earned and only a limited residue remains to be collected when the returns are filed. The collections for a given fiscal year include tax deductions and instalments for twelve months, embracing portions of two taxation years, and a mixture of year-end payments for the first of these years and for the preceding year; they cannot therefore be closely related to the statistics for a given taxation year. As little information about a taxpayer is received when the payment is made and as a single cheque from one employer may frequently cover the tax payment of hundreds of employees, the payments cannot be statistically related to taxpayers by occupation or income. Descriptive classifications of taxpayers are available only from tax returns but collection statistics, if interpreted with the current tax structure and the above factors in mind, indicate the trend of income in advance of the final compilation of statistics.

The statistics given in Table 14 pertain to tax collections by the Taxation Division of the Department of National Revenue. The collections are for fiscal years ended Mar. 31.

### 14.—Taxes Collected by the Taxation Division of the Department of National Revenue, Years Ended Mar. 31, 1957-66

NOTE.—Comparable figures from 1917 are given in the corresponding table of previous Year Books beginning with the 1947 edition.

Year Ended Mar. 31—	Income Tax <sup>1</sup>			Estate Tax	Total Collections
	Individual <sup>2</sup>	Corporation	Total		
	\$	\$	\$	\$	\$
1957.....	1,601,897,580	1,335,636,914	2,937,534,494	79,709,197	3,017,243,691
1958.....	1,699,123,470	1,295,470,725	2,994,594,195	71,607,758	3,066,201,953
1959.....	1,561,062,606	1,075,878,164	2,636,940,770	72,535,140	2,709,475,910
1960.....	1,825,547,063	1,234,215,702	3,059,762,765	88,430,705	3,148,193,470
1961.....	2,028,733,394	1,380,123,380	3,408,861,774	84,879,372	3,493,741,146
1962.....	2,200,573,190	1,303,502,634	3,504,075,824	84,579,382	3,588,655,206
1963 <sup>3</sup> .....	2,399,882,273	1,362,655,419	3,762,537,692	87,143,312	3,849,681,004
1964 <sup>3</sup> .....	2,579,083,811	1,472,175,333	4,051,259,144	90,671,283	4,141,930,427
1965 <sup>3</sup> .....	3,047,590,003	1,804,507,172	4,852,097,176	88,625,641	4,940,722,817
1966 <sup>3</sup> .....	3,326,657,371	1,891,085,343	5,227,742,714	108,352,377	5,336,095,091

<sup>1</sup> Includes old age security tax.  
income tax collected by the Taxation Division.

<sup>2</sup> Includes "non-resident" taxes.

<sup>3</sup> Includes amounts of provincial

**Individual Income Tax Statistics.**—Individual income tax statistics are presented in Tables 15 to 17 on a calendar-year basis and are compiled from a sample of all returns received. Taxpayers and amounts of income and tax are shown for selected cities and by occupation and income classes.

### 15.—Number of Taxpayers and Amounts of Income and Tax, by Selected Cities, 1963 and 1964

City and Province	1963			1964		
	Taxpayers	Total Income Assessed	Tax Payable <sup>1</sup>	Taxpayers	Total Income Assessed	Tax Payable <sup>1</sup>
	No.	\$'000	\$'000	No.	\$'000	\$'000
Brantford, Ont.....	22,837	99,308	10,281	23,087	108,624	12,338
Calgary, Alta.....	95,957	458,604	50,529	104,001	524,035	61,143
Edmonton, Alta.....	118,479	545,783	57,004	124,403	585,811	64,969
Fort William and Port Arthur, Ont..	32,864	146,735	14,120	34,025	160,238	16,737
Halifax, N.S.....	37,436	161,302	16,132	39,704	183,395	20,560
Hamilton, Ont.....	132,688	652,172	71,173	141,826	725,443	86,301
Hull, Que.....	26,853	115,739	8,842	29,612	131,883	10,786
Kitchener and Waterloo, Ont.....	43,608	198,072	21,297	45,319	217,820	25,436
London, Ont.....	65,911	299,149	32,120	69,023	328,933	38,225
Montreal, Que.....	623,880	2,971,050	283,931	682,101	3,378,775	346,874
New Westminster, B.C.....	34,391	160,728	15,456	38,406	190,087	20,252
Niagara Falls, Ont.....	17,286	77,288	7,359	19,937	90,878	9,669
Oshawa, Ont.....	27,293	143,579	17,296	29,533	154,820	19,511
Ottawa, Ont.....	117,329	582,356	66,936	124,172	638,764	77,425
Quebec, Que.....	87,163	393,856	33,618	97,134	453,796	40,685
Regina, Sask.....	42,636	194,320	21,577	45,144	215,596	26,028
St. Catharines, Ont.....	34,955	169,092	17,560	35,863	185,926	21,670
St. John's, Nfld.....	23,816	102,889	10,204	24,226	106,726	11,564
Saint John, N.B.....	24,280	99,128	8,761	25,749	111,819	10,796
Saskatoon, Sask.....	32,177	141,910	14,575	34,472	158,364	18,123
Sherbrooke, Que.....	21,050	88,678	6,877	22,706	99,826	8,619
Sudbury and Copper Cliff, Ont.....	31,471	150,128	14,454	33,867	166,870	17,706
Sydney and Glace Bay, N.S.....	21,698	93,342	7,161	23,264	99,282	8,247
Toronto, Ont.....	720,714	3,500,778	425,412	762,741	3,893,189	509,961
Vancouver (incl. West Van.), B.C....	234,042	1,148,052	131,282	250,820	1,294,699	163,207
Victoria, B.C.....	49,301	229,759	23,480	51,979	247,245	26,755
Windsor, Ont.....	54,194	271,000	28,630	61,075	322,374	37,375
Winnipeg, Man.....	165,584	736,369	80,032	173,070	795,104	91,564
Other localities.....	1,987,475	8,490,441	746,907	2,154,810	9,603,631	916,585
<b>Totals.....</b>	<b>4,927,373</b>	<b>22,421,607</b>	<b>2,243,042</b>	<b>5,301,219</b>	<b>25,173,953</b>	<b>2,719,291</b>

<sup>1</sup> Includes old age security tax.



**16.—Number of Taxpayers and Amounts of Income and Tax, by Occupational Class, 1963 and 1964**

Occupational Class	1963			1964		
	Taxpayers	Total Income Assessed	Tax Payable <sup>1</sup>	Taxpayers	Total Income Assessed	Tax Payable <sup>1</sup>
	No.	\$'000	\$'000	No.	\$'000	\$'000
Farmers.....	92,026	421,682	38,388	106,614	526,977	52,301
Fishermen.....	4,177	20,823	2,136	5,755	28,893	3,025
Professionals—						
Accountants.....	4,590	50,462	9,293	4,793	62,411	12,686
Medical doctors.....	15,019	291,869	71,316	15,182	326,019	83,429
Dentists.....	5,092	69,653	13,956	5,102	76,067	16,105
Lawyers and notaries.....	7,728	125,832	30,150	8,328	143,921	35,183
Engineers and architects.....	2,594	38,880	9,001	2,621	44,035	10,648
Employees.....	4,295,491	18,687,839	1,750,407	4,606,207	20,882,428	2,123,193
Salesmen.....	51,311	322,740	38,057	59,723	401,484	51,757
Business proprietors.....	214,007	1,167,837	132,553	224,153	1,278,345	153,320
Investors.....	147,424	892,669	118,528	160,452	1,032,838	146,264
Pensioners.....	61,912	200,188	12,245	78,943	254,274	16,226
All others.....	26,002	131,133	17,012	23,346	116,261	15,064
<b>Totals.....</b>	<b>4,927,373</b>	<b>22,421,607</b>	<b>2,243,042</b>	<b>5,301,219</b>	<b>25,173,953</b>	<b>2,719,201</b>

<sup>1</sup> Includes old age security tax.
**17.—Individual Income Tax Statistics, by Income Class, 1963 and 1964**

Taxable Income	Taxpayers		Total Income Assessed		Tax Payable <sup>1</sup>		Average Tax <sup>1</sup>	
	1963	1964	1963	1964	1963	1964	1963	1964
	No.	No.	\$'000	\$'000	\$'000	\$'000	\$	\$
Under \$1,000.....	36,785	28,763	17,306	14,779	2,486	1,744	68	61
\$ 1,000 and under \$ 2,000....	637,433	644,711	995,920	1,007,385	36,466	39,155	57	61
\$ 2,000 " " \$ 3,000....	896,573	909,264	2,254,275	2,285,332	136,432	149,531	152	164
\$ 3,000 " " \$ 5,000....	1,845,210	1,913,838	7,321,585	7,612,360	529,687	606,490	287	317
\$ 5,000 " " \$10,000....	1,306,679	1,562,635	8,418,427	10,151,595	835,273	1,064,008	639	681
\$10,000 " " \$25,000....	182,082	214,184	2,500,980	2,960,463	420,551	504,031	2,310	2,353
\$25,000 " " \$50,000....	18,755	22,946	616,935	756,835	172,212	211,463	9,182	9,216
\$50,000 or over.....	3,856	4,878	296,179	385,204	109,935	142,779	28,510	29,270
<b>Totals.....</b>	<b>4,927,373</b>	<b>5,301,219</b>	<b>22,421,607</b>	<b>25,173,953</b>	<b>2,243,042</b>	<b>2,719,201</b>	<b>455</b>	<b>513</b>

<sup>1</sup> Includes old age security tax.

### 18.—Summary Statistics for Corporations Reporting a Profit, Taxation Years 1963 and 1964

Item	1963			1964		
	Corporations Reporting	Current Year Profit	Total Tax Declared <sup>1</sup>	Corporations Reporting	Current Year Profit	Total Tax Declared <sup>1</sup>
	No.	\$'000,000	\$'000,000	No.	\$'000,000	\$'000,000
Active taxable corporations—excluding co-operatives and Crown corporations.....	80,516	4,208.8	1,450.9	87,209	4,593.3	1,621.3
Inactive corporations.....	5,073	2.2	0.2	5,608	1.5	0.1
Co-operatives.....	1,715	8.4	1.8	1,998	10.6	2.2
Crown corporations.....	6	32.6	16.2	6	28.5	14.5
<b>Totals, Taxable Corporations.....</b>	<b>87,310</b>	<b>4,252.0</b>	<b>1,469.1</b>	<b>94,821</b>	<b>4,633.9</b>	<b>1,638.0</b>
Personal corporations.....	3,073	43.4	—	3,397	45.3	—
Other exempt corporations.....	4,032	53.4	—	4,224	58.6	—
<b>Totals, Taxable and Exempt.....</b>	<b>94,415</b>	<b>4,348.8</b>	<b>1,469.1</b>	<b>102,442</b>	<b>4,737.9</b>	<b>1,638.0</b>

<sup>1</sup> Includes old age security tax.

### 19.—Distribution of Active Taxable Corporations Reporting a Profit, by Industry and Province, Taxation Years 1963 and 1964

Industrial Group and Province	1963			1964		
	Corporations Reporting	Current Year Profit	Total Tax Declared <sup>1</sup>	Corporations Reporting	Current Year Profit	Total Tax Declared <sup>1</sup>
	No.	\$'000,000	\$'000,000	No.	\$'000,000	\$'000,000
<b>Industrial Group</b>						
Agriculture, fishing and forestry.....	1,695	26.6	6.4	2,079	40.1	10.7
Mining, quarrying and oil.....	852	236.8	99.9	732	265.6	111.1
Manufacturing.....	14,088	2,040.8	742.9	14,273	2,095.9	795.8
Construction.....	8,297	135.0	29.2	9,364	150.9	29.2
Transportation, storage and other utilities.....	3,386	458.3	175.8	3,894	520.6	212.6
Wholesale trade.....	12,097	331.1	97.2	12,606	383.4	113.8
Retail trade.....	14,091	285.2	89.7	15,593	325.2	105.0
Finance, insurance and real estate...	16,324	563.0	177.8	18,166	655.6	205.4
Service.....	9,686	132.1	31.9	10,502	155.9	37.7
<b>Totals.....</b>	<b>80,516</b>	<b>4,208.8</b>	<b>1,450.9</b>	<b>87,209</b>	<b>4,593.3</b>	<b>1,621.3</b>
<b>Province</b>						
Newfoundland.....	922	38.2	15.6	847	40.1	16.9
Prince Edward Island.....	274	6.4	1.8	311	9.2	2.3
Nova Scotia.....	2,078	48.0	16.5	2,200	44.4	15.2
New Brunswick.....	1,234	38.1	13.1	1,775	35.3	10.8
Quebec.....	20,350	1,233.5	414.9	20,676	1,410.8	488.8
Ontario.....	29,218	2,048.2	697.4	32,267	2,160.3	754.8
Manitoba.....	3,927	129.1	49.0	4,135	190.4	73.8
Saskatchewan.....	2,365	44.0	14.2	2,759	47.9	15.0
Alberta.....	8,060	233.1	82.9	8,589	225.8	78.9
British Columbia.....	12,088	390.2	145.5	13,650	429.1	164.6

<sup>1</sup> Includes old age security tax.

## 20.—Corporations Reporting a Profit, by Income Class and Size of Total Assets, Taxation Years 1963 and 1964

NOTE.—Figures are for corporations described as "fully tabulated", which means corporations for which sufficient information has been received for complete analyses.

Income Class and Size of Assets	1963		1964	
	Corpora- tions Reporting	Current Year Profit	Corpora- tions Reporting	Current Year Profit
Income Class	No.	\$'000,000	No.	\$'000,000
Under \$5,000.....	33,465	55.2	35,881	58.0
\$5,000 under \$10,000.....	14,301	97.2	15,253	102.7
\$10,000 under \$25,000.....	16,204	248.1	18,620	288.2
\$25,000 under \$50,000.....	9,498	316.5	10,061	333.8
\$50,000 under \$100,000.....	2,468	171.9	2,666	182.5
\$100,000 under \$250,000.....	1,782	279.7	1,881	292.5
\$250,000 under \$500,000.....	728	253.3	821	288.8
\$500,000 under \$1,000,000.....	413	282.8	477	334.5
\$1,000,000 under \$5,000,000.....	391	792.3	415	829.8
\$5,000,000 or over.....	98	1,486.2	111	1,652.2
<b>Totals.....</b>	<b>79,348</b>	<b>3,983.3</b>	<b>86,186</b>	<b>4,363.0</b>
Size of Assets				
Under \$100,000.....	36,333	193.1	39,326	210.0
\$100,000 under \$250,000.....	20,842	245.8	21,959	271.5
\$250,000 under \$500,000.....	10,445	218.7	11,892	239.2
\$500,000 under \$1,000,000.....	5,625	216.2	6,189	229.7
\$1,000,000 under \$5,000,000.....	4,593	534.6	5,142	602.3
\$5,000,000 under \$10,000,000.....	668	283.5	791	310.7
\$10,000,000 under \$25,000,000.....	443	361.1	452	365.9
\$25,000,000 under \$100,000,000.....	276	596.1	301	670.0
\$100,000,000 or over.....	123	1,354.2	134	1,463.7

## Succession Duties and Estate Taxes

A history of succession duties is given in the 1956 Year Book, pp. 1064-1068. From Jan. 1, 1947 to Mar. 31, 1963, only Ontario and Quebec among the provinces levied succession duties, the other provinces having leased this field to the Federal Government under the terms of the 1947, 1952 and 1957 tax agreements (see p. 1020). However, British Columbia re-entered the field, effective for all deaths occurring on or after Apr. 1, 1963. The incidence of the estate tax is discussed at pp. 1026-1027.

Federal revenue from succession duties and estate taxes in the year ended Mar. 31, 1965 amounted to \$88,625,641. In the same year, Quebec's revenue from succession duties amounted to \$35,426,000 and Ontario's revenue from succession duties to \$48,682,000.

## Excise Taxes

Excise taxes collected by the Excise Division of the Department of National Revenue are given for the years ended Mar. 31, 1964 to 1966 in Table 21.

### 21.—Excise Taxes Collected, by Commodity, Years Ended Mar. 31, 1964-66

Commodity	1964	1965	1966
	\$	\$	\$
Sales tax <sup>1,2</sup> .....	946,054,797	1,204,609,934	1,395,128,921
Other Excise Taxes—			
Automobiles.....	194	239	—
Cigarettes, tobacco and cigars.....	226,938,710	218,343,946	238,080,357
Electric power export.....	126,937	—	1,228,556
Jewellery, watches, ornaments, etc.....	6,353,314	6,864,180	7,935,585
Matches and lighters.....	1,261,797	1,181,009	1,228,556
Television sets, radios, tubes and phonographs.....	22,009,701	23,521,713	26,960,462
Toilet preparations.....	11,125,893	12,790,734	14,113,979
Wines.....	3,814,127	4,092,094	4,401,603
Sundry commodities.....	1,301,810	1,426,553	2,185,240
Interest and penalties.....	814,291	1,208,554	1,620,049
Less refunds and drawbacks.....	-331,330	-346,938	-347,733
<b>Totals.....</b>	<b>1,219,470,241</b>	<b>1,473,692,018</b>	<b>1,691,307,019</b>

<sup>1</sup> Excludes tax credited to the old age security fund.

<sup>2</sup> Net after deduction of refunds and drawbacks.



## Excise Duties

Gross excise duties collected are given in the following statement for the years ended Mar. 31, 1964 and 1965. The totals do not agree with net excise duties as shown in Table 9 because refunds and drawbacks are included. A drawback of 99 p.c. of the duty may be granted when domestic spirits, testing not less than 50 p.c. over proof, are delivered in limited quantities for medicinal or research purposes to universities, scientific or research laboratories, public hospitals, or health institutions in receipt of federal and provincial government aid.

<u>Item</u>	<u>1964</u>	<u>1965</u>
	<u>\$</u>	<u>\$</u>
Spirits.....	129,399,249	134,716,066
Beer or malt liquor.....	102,914,379	105,386,115
Tobacco and cigarettes.....	164,804,918	176,129,508
Cigars.....	836,018	1,038,218
Licences.....	35,770	32,419
TOTALS.....	<u>397,990,334</u>	<u>417,302,326</u>

## Section 4.—Federal-Provincial Conditional Grants and Shared-Cost Programs\*

During the past decade there has been a rapid increase in federal expenditures on joint federal-provincial programs. These programs take three forms: (1) the Federal Government contributes financial assistance to a program administered by a province; (2) the federal and provincial governments each assume the sole responsibility for the construction, administration and financing of separate aspects of a joint project; or (3) the province contributes financially to a joint program administered by the Federal Government.

The first category of joint programs is by far the most common and such programs are commonly called conditional grant programs. They are characterized by the Federal Government agreeing to make money available to a province on certain conditions, such conditions always specifying the field, service or project to which the money must be applied. In addition, the province may be required to make a financial contribution to the program, to provide certain facilities, and to maintain the program at certain specified standards. The various programs in the welfare field were good examples of conditional grant programs. Under the old age assistance program, the Federal Government undertook to share with a province the cost of assistance to persons who had attained the age of 65 years to the extent of 50 p.c. of a monthly assistance allowance of \$75; the recipient, besides being above a certain age, must have been a resident of Canada for 10 years and his income, including the assistance, must not be in excess of \$1,260 a year if unmarried, \$2,220 if married, and \$2,580 if married to a blind spouse. The provinces are entrusted with the administration of the program and are required to bear the administrative costs as well as one half of the monthly allowance.

Although the old age assistance program, with its specification of the standards for eligibility, the level of the allowance and the federal share of the joint costs, is characteristic of conditional grant programs, there are some in which the conditions are nominal. For example, under the employment assistance program the Federal Government undertook to share one half of the cost of relief paid to social assistance recipients, the scale and conditions of the assistance to be determined by the provinces. In general, it may be said that the old age assistance program conformed to the traditional pattern of conditional

\* Prepared (December 1966) in the Federal-Provincial Relations Division, Department of Finance, Ottawa.

### Additional Readings:—

Donald V. Smiley, *Conditional Grants and Canadian Federalism* (Canadian Tax Papers No. 32), Toronto, Canadian Tax Foundation, February 1963. Federal-Provincial Relations Division, Department of Finance, *Federal-Provincial Conditional Grant and Shared-Cost Programmes, 1962*, Ottawa, Queen's Printer, October 1963, \$3 (Catalogue No. F2-2563). Appendix to House of Commons Debates of Sept. 10, 1964. Statutes of Canada 1964-65, c. 54.

grants, whereas the unemployment assistance program marked a newer approach in which flexibility and adaptability to local circumstances was allowed to modify insistence on a national uniform standard.

The federal transfers to the provinces in respect of the conditional grant programs increased from \$75,000,000 in the year ended Mar. 31, 1954, to an estimated \$1,109,107,000 in 1965-66. The increase was attributable largely to the introduction of the unemployment assistance program in 1955 and the hospital insurance and diagnostic services program in 1958, to the increase in the level of old age assistance, disabled persons' and blind persons' allowances, and to the enlargement and reorientation of the vocational and technical training program (see pp. 347-348). In 1965-66, federal contributions to the programs in respect of the unemployment assistance and the hospital insurance and diagnostic services programs were estimated at \$123,983,000 and \$492,061,000, respectively.

Joint programs in the second category—those in which the federal and provincial governments accept sole responsibility for portions of a total project—are not numerous and are generally of a public works type. The irrigation projects carried out jointly by the Prairie Farm Rehabilitation Administration and the Province of Alberta on the St. Mary's and Bow Rivers in southern Alberta are of this nature, as is the bridge recently built between Ottawa in Ontario and Hull in Quebec. In the St. Mary's irrigation project, the Federal Government has undertaken the responsibility for the construction of all main reservoirs, large dams and connecting works, and Alberta has assumed responsibility for the construction of the distribution system and the development and colonization of the new irrigable areas.

Joint programs in the third category are also few in number and the sums of money involved are seldom large. The Fraser River Board and the South Saskatchewan River Dam are two examples. The Fraser River Board was established by Canada and British Columbia in 1955 to investigate flood control and hydro-electric power generation on the Fraser River. Canada undertook to pay the costs of the Board in the first instance with British Columbia subsequently reimbursing Canada for half of the expenditures of the Board. In the case of the South Saskatchewan River project, Saskatchewan is to reimburse Canada for 25 p.c. (up to a maximum of \$25,000,000) of the federal expenditure on the dam and reservoir. In the year ended Mar. 31, 1965, British Columbia's share of the joint expenditures on the Fraser River Board amounted to \$7,741, and Saskatchewan's share of the expenditures on the South Saskatchewan River project was \$4,288,543.

The increasing number and extent of conditional grant and shared-cost programs has occasioned some provincial criticisms and misgivings. It has been argued that the preponderant occupancy of the direct tax field in the postwar years by the Federal Government encouraged the growth of such programs as the provinces were denied the revenues that would have enabled them to provide equivalent programs themselves. At the 1964 Federal-Provincial Conference, the Province of Quebec proposed that a province be given the option to assume full administrative and financial responsibility for certain joint programs on the Federal Government making available to that province the necessary additional tax room. The "contracting-out" proposal was referred to a federal-provincial committee of officials for consideration. As a consequence of their consideration, the Prime Minister of Canada, in a letter to the provincial Premiers dated Aug. 15, 1964, proposed a temporary measure permitting a province to contract out of certain programs for an interim period pending the development of more permanent arrangements. Parliament approved the necessary legislation—the Established Programs (Interim Arrangements) Act—in April 1965. Under the Act the Government of Canada was authorized to enter into agreements with any province that wished to contract out of certain conditional grant programs. The nature and number of programs were itemized in the schedules to the Act.



Schedule I listed the major conditional grant programs of a continuing nature which a province might contract out of, and Schedule II listed smaller and more transient programs. The Schedule I programs were: (1) hospital insurance; (2) old age assistance, blind persons' allowances, disabled persons' allowances, and the welfare portion of unemployment assistance; (3) the technical and vocational training programs for youths who were not yet members of the labour force; and (4) the health grant program, except those elements that involved research and demonstration. The Schedule II programs: (1) agricultural lime assistance; (2) the forestry programs; (3) hospital construction grants; (4) campgrounds and picnic areas; and (5) the roads to resources program.

If a province wished to contract out of a Schedule I program, it had to enter into a supplemental agreement in which it undertook to assume full responsibility for the administration and financing of the program. The Federal Government undertook to ensure that the province received revenue equivalent to the fiscal burden it assumed. The Federal Government undertook to (a) abate by a specified percentage the federal individual income tax on the income of residents of the province; (b) pay an associated equalization; and (c) make an operating cost adjustment. The operating cost adjustment payment or recovery was to ensure that a province did not suffer or benefit financially through assuming the financing of the federal share of the former joint program. Because of their smaller size and lack of continuity, the compensation associated with contracting-out of a Schedule II program did not provide for federal tax abatement or associated equalization payments. The compensation for these programs was to be paid directly to the province by the federal Minister of Finance.

The freedom of a province to vary the nature and condition of a program which it has contracted out of differed between the Schedule I and Schedule II programs. Under the Act, a supplemental agreement with respect to a Schedule I program could vary the conditions of the original agreement only as to the manner in which Canada would contribute to the program and the manner in which accounts were submitted. A supplemental agreement for a Schedule II program might require the program to be continued as in the original authority or it might allow a province to substitute a provincial program whose objectives were substantially similar.

The Established Programs (Interim Arrangements) Act was designed to provide for an interim period during which a province might assume greater administrative and financial responsibility for the enumerated programs and during which time more permanent arrangements governing joint programs might be devised. The length of the interim period was set out in the Act for each program and varied from Mar. 31, 1967 to Dec. 31, 1970. The tax abatement associated with Schedule I programs was also set out in the Act and varied from 1 p.c. for the health grant program to 14 p.c. for hospital insurance.

The Province of Quebec alone availed itself of the above legislation and entered into agreements contracting out of all Schedule I programs and one Schedule II program, the forestry program. At the federal-provincial meetings in September and October 1966, the Federal Government proposed a slightly revised contracting-out arrangement to the provinces who had not taken advantage of the Established Programs (Interim Arrangements) Act. The Federal Government proposed to abate, for the period 1967-70, 17 p.c. of the personal income tax in those provinces that would take over the financial responsibility for the hospital insurance, welfare (i.e., Canada Assistance Plan) and health grant programs. To ensure fiscal equity, equalization and operating cost adjustment payments were to be associated with the abatement. As the technical and vocational program was being discontinued in its existing form, the offer did not apply to that program. None of the nine provinces to whom the offer applies has indicated its intention to accept.



22.—Conditional Grants and Shared-Cost Programs as at Mid-1966

Department and Project	Year Estab- lished	Basis of Provincial Apportionment of Federal Funds	Provinces Participating <sup>1</sup>	Provincial Share <sup>2</sup>	Maximum Limitation on Grant <sup>3</sup>	Federal Contribution 1964-65 <sup>4</sup>
<b>Agriculture—</b>						\$'000
Premiums on purebred sires, etc.	1913	Extent of provincial programs.	10	s	s	55
Freight assistance on livestock shipments to Royal Winter Fair.	1946	Extent of provincial programs.	9 (Ont.)	25	O	29
4-H Club Activities.	1900	Extent of provincial programs.	10	50	O	135
Potato Warehouse Construction.	1947	Estimated cost.	P.E.I., Man., Sask., B.C.	37½	O	—
Agricultural Lime Assistance.	1943	Extent of provincial programs.	7 (Prairie)	40	O	1,584
Land Protection and Reclamation—						
Riding and Duck Mountains.	1949	Estimated cost.	Man.	50	F	8
St. Mary's Irrigation.	1950	Estimated cost.	Alta.	s	F	1,359
Bow River Irrigation.	1950	Estimated cost.	Alta.	e	F	1,220
Assiniboine River—						
Shellmouth Dam and Portage Diversion.	1963	Estimated cost.	Man.	50	O	701
South Saskatchewan Dam (dams and reservoir).	1953	Estimated cost.	Sask.	25	P	14,238
Assistance in Fodder Transportation.	ad hoc	Estimated cost.	N.S., Man., Sask., B.C.	50	O	503
Crop loss compensation.	ad hoc	Extent of provincial programs.	P.E.I., Man., Sask.	50 0-50 of admin. costs	FP	—
Crop Insurance.	1961				O	487
Indemnity for Losses due to Disease—						
Rabies.	1959	Incidence of disease.	Que., Ont.	60	O	19
Barberry eradication.	1964	Extent of provincial programs.	Que., Ont.	50	O	92
<b>Citizenship and Immigration—</b>						
Hospitalization and welfare of indigent immigrants.	1947	Estimated cost.	9 (N.B.)	50	O	31
Instruction for immigrants.	1964	Extent of provincial programs.	9 (Que.)	50	O	260
Fur conservation.	1939	Extent of provincial programs.	Ont., Man., Sask., Alta.	40-50	F	187
Roads on and to Indian Reserves—						
Saskatchewan Region.	ad hoc	Estimated cost.	Sask.	50	O	108,536
Six Nations Reserve.	ad hoc	Estimated cost.	Ont.	50-80	O	2,416,319
Non-reserve Schools for Indians—						
Capital contribution.	ad hoc	Estimated cost.	various school districts	ratio white to Indian children	O	—
Instructional contribution.	1948	Estimated tuition costs.	various school districts	—	O	5,290
Community Development.	1961	Recurring costs.	Prairie	s	O	75
Economic Development.	1964	Estimated cost.	Ont., Man., Sask.	—	O	167
Welfare services to Indians.	1960	Specified in each agreement.	Ont., Man., Alta.	0-50	varies	125

For footnotes, see end of table, p. 1056.

## 22.—Conditional Grants and Shared-Cost Programs as at Mid-1966—continued

Department and Project	Year Estab- lished	Basis of Provincial Apportionment of Federal Funds	Provinces Participating <sup>1</sup>	Provincial Share <sup>2</sup>	Maximum Limitation on Grant <sup>3</sup>	Federal Contribution 1964-65 <sup>4</sup>
<b>Emergency Measures</b> .....	1952	Population.....	10	P.C. 25-50 <sup>7</sup>	F	\$'000 4,927
<b>Fisheries</b> —						
Construction subsidy—fishing vessels.....	1942	Extent of provincial programs.....	Atlantic, Que. Nfld.	— \$	O	800
Community fishing stages.....	1959	Estimated cost.....	Atlantic	50	O	489
Industrial development.....	1959	Extent of provincial programs.....				—
<b>Forestry</b> —						
Forest inventory.....	1951		7 (Nfld., P.E.I., Que.)	50	F	931
Reforestation.....	1951	Flat grant to P.E.I.; other provinces	8 (N.B., Que.)	75	F	703
Forest Fire Protection.....	1957	ratio of their productive forest lands	10	50	F	3,379
Forest Access Roads.....	1958	to the total.	10	50	F	2,779
Forest Stand Improvement.....	1962		7 (Nfld., Alta., B.C., N.S. N.B.)	50 50 33 <sup>‡</sup>	F F F	118 81 479
Forest Stand Improvement (Cape Breton).....	1961	Extent of Unemployment.....				
Spruce Budworm Eradication.....	1953	Incidence of Infestation.....				
Agricultural and Rural Development (Act).....	1962	Flat grant—ratio of net value of agri- cultural production, number of sub- marginal farms and rural population to the national totals.....	10	33 <sup>‡</sup> -50	F	—
<b>Labour</b> —						
Agricultural Manpower.....	1941	Specified in Agreement.....	9 (Nfld.)	50	F	100
Rehabilitation of Disabled Persons.....	1953	Extent of provincial programs.....	9 (Que.)	50	O	642
Technical and Vocational Training— Vocational High School Training.....	1950	Flat grant and population (15-19 age group).....	10	50	F	3,563
Technician Training.....	1960	Extent of provincial programs.....	9 (P.E.I.)	50	O	10,234
Trade and Other Occupational Training.....	1960	Extent of provincial programs.....	10	50	O	14,290
Training in Co-operation with Industry.....	1946	Extent of provincial programs.....	7 (Nfld., P.E.I., Sask.)	25 10-50	O	329
Training of Unemployed.....	1948	Extent of provincial programs.....	10	50	O	13,500
Training of the Disabled.....	1960	Extent of provincial programs.....	9 (P.E.I.)	50	O	655
Training of Technical and Vocational Teachers.....	1960	Extent of provincial programs.....	9 (P.E.I.)	50	O	605
Training for Federal Departments and Agencies.....	1942	Estimated cost.....	varies	0-25	O	62
Student Aid.....	1937	Specified in Agreement.....	10	50	F	288
Technical and Vocational Correspondence Courses.....	1950	Extent of provincial programs.....	varies	50	O	17

1945	Capital Contribution.....	1945	Extent of provincial programs.....	10	8 (P.E.I., Que.) 10	25 to Mar. 31, 1970 and 50 thereafter 50	F O O	52,728 695 42,703
1944	Apprenticeship Training.....	1944	Extent of provincial programs.....					
1953	Municipal Winter Works.....	1953	Extent of approved municipal programs.....					
<b>National Health and Welfare—</b>								
National Health Grants—								
1948	Hospital Construction.....	1948	Estimated construction.....	10	50		F	21,469
1948	Professional Training.....	1948	Fiat grant and population.....	10	50		F	1,929
1948	Mental Health.....	1948	Fiat grant and population.....	10	50		F	8,635
1948	Tuberculosis Control.....	1948	Fiat grant, population and T.B. deaths.....	10	50		F	3,378
1948	Public Health Research.....	1948	Based on research needs.....	10	50		F	1,641
1948	Cancer Control.....	1948	Fiat grant and population.....	10	50		F	2,547
1948	General Public Health.....	1948	Fiat grant and population.....	10	50		F	12,720
1953	Child and Maternal Health.....	1953	Fiat grant, provincial infant birth and death ratio.....	10	50		F	1,409
1953-48	Medical Rehabilitation and Crippled Children.....	1953-48	Fiat grant and population.....	10	50		F	2,463
1953	Hospital Insurance.....	1953	Population eligible for hospitalization costs + 25 p.c. of average provincial per capita costs.....	10	50		O	432,905
1952	Old Age Assistance.....	1952	Needy population (age group 65-69).....	10	50		O	44,905
1937	Blind Persons' Allowances.....	1937	Needy blind population (age group 18-69).....	10	25		O	5,589
1954	Disabled Persons' Allowances.....	1954	Needy disabled population (age group 18-69).....	10	50		O	23,346
1955	Unemployment Assistance.....	1955	Needy unemployed.....	10	50		O	107,384
1962	Fitness and Amateur Sport.....	1962	Fiat grant and population.....	9 (Que.)	40		F	415
1964	Disability Advisory Services.....	1964	Extent of provincial programs.....	9 (Que.)	50		O	22
1948	Blind Pensioners—treatment.....	1948	Extent of provincial programs.....	8 (Alta., B.C.)	25		O	19
1962	National Welfare Grants— —welfare research.....	1962	Based on need.....	8 (P.E.I., Que.)	50		F	368
—	—general welfare and professional training.....	—						
<b>National Research Council—</b>								
Technical Information Services.....								
1952	Technical Information Services.....	1952	Extent of provincial programs.....	7 (Nfld., P.E.I., Que.)			O	209
<b>Northern Affairs and National Resources—</b>								
Water Conservation.....								
1938	Nelson River Study.....	1938	Estimated construction costs.....	Ont.	374-62½		F	1,595
1963	Fraser River Board.....	1963	Estimated survey cost.....	Man.	50		F	1,782
1921	Lake of the Woods Control Board.....	1921	Estimated capital cost.....	Man., Ont.	66½		O	—
1949	Greater Winnipeg Floodway.....	1949	Extent of Board Program.....	B.C.	50		O	7,425
1962	Roads to Resources.....	1962	Estimated cost.....	Man.	25-62½		F	6,002
1958	Campgrounds—Picnic Areas.....	1958	Fiat grant for province.....	10	50		F	59
1959		1959	Extent of provincial program.....	8 (Que., Ont.)	50		F	

For footnotes, see end of table, p. 1056.



## 22.—Conditional Grants and Shared-Cost Programs as at Mid-1966—concluded

Department and Project	Year Estab- lished	Basis of Provincial Apportionment of Federal Funds	Provinces Participating <sup>1</sup>	Provincial Share <sup>2</sup>	Maximum Limitation on Grant <sup>3</sup>	Federal Contribution 1964-65 <sup>4</sup>
<b>Public Works—</b>						\$'000
Trans-Canada Highway.....	1950	Provincial mileage and extent of pro- vincial programs.....	10	10-50	O	76,085
Okanagan Flood Control.....	1950	Estimated cost.....	B.C.	50	O	6
Ottawa-Hull Bridge.....	1961	Estimated cost.....	Que., Ont.	33½	O	930
Urban Redevelopment.....	1944	Project cost.....	10	50	O	4,219
Urban Renewal Studies <sup>1</sup> .....	1956	Project cost.....	10	25-50 <sup>2</sup>	O	1,568
Land Assembly and Low-Rentel Housing <sup>1</sup> .....	1949	Project losses.....	10	25 <sup>2</sup>	O	1,488
Sewage Facilities—capital forgiveness.....	1954	Work completed.....	10	25	O	7,020
<b>Secretary of State—</b>						
Centennial observance.....	1961	Flat grant and population.....	10	—	F	976
<b>Trade and Commerce—</b>						
Vital Statistics.....	1909	Estimated cost.....	10	6	O	73
<b>Transport—</b>						
Railway Grade Crossing Fund.....	1909	Approved construction.....	10	12½-15 <sup>2</sup>	F	2,716
Municipal Airports.....	1927	Related to airport operational deficit..	10	—	O	153
Operational subsidy.....	—	Approved capital projects.....	10	50 <sup>2</sup>	F	36
Capital.....	—					

<sup>1</sup> Provinces excepted are shown in parenthesis.<sup>2</sup> As here used, 50 p.c. may mean the province must contribute 50 p.c. of the cost of the project or must match the federal contribution.<sup>3</sup> F = a maximum limit set to the federal share; P = a maximum limit to the provincial share; and O = federal and provincial shares are open-ended.<sup>4</sup> Source: *Public Accounts of Canada, 1964-65*.<sup>5</sup> Not uniform.<sup>6</sup> Provinces to provide administration, services, facilities, land, loans or to undertake a specific portion of the project, etc.<sup>7</sup> Represents the provincial and/or municipal share.<sup>8</sup> Each government undertakes to carry out an aspect of the program and bear the costs associated with that aspect.<sup>9</sup> Provinces to maintain existing level of expenditures.<sup>10</sup> Share for provision of services only.<sup>11</sup> Disbursement made by Central Mortgage and Housing Corporation as Federal Government agent.

## Section 5.—Provincial Government Finance

Provincial government accounting and reporting practices vary considerably so that certain adjustments to the *Public Accounts* figures are required in order to produce comparable statistics. For example, transactions relating to a specific function are sometimes excluded from ordinary account; therefore special or administrative funds of this nature have been added to provincial ordinary account in the tables of this Section. The fiscal years of all provinces end on Mar. 31.

**Revenue and Expenditure.**—Table 23 shows net general revenue and expenditure of provincial governments for the years ended Mar. 31, 1960-64, and Tables 24 and 25 give details of such revenue and expenditure for the fiscal year ended Mar. 31, 1964. "Net general revenue" and "net general expenditure" are arrived at by first analysing the combined revenues and expenditures of capital account, current or ordinary account and those working capital funds and special funds for which separate accounts are kept. Then the following types of revenue are deducted from revenue and offset against related expenditure: interest, premium, discount and exchange; institutional revenue; and grants-in-aid and shared-cost contributions from other governments. Table 26 gives details of the amounts paid to other governments by provincial governments, according to nature of payment.

**23.—Net General Revenue and Expenditure of Provincial Governments, Years Ended Mar. 31, 1960-64**

Province or Territory	1960	1961	1962	1963	1964
<b>NET GENERAL REVENUE</b>					
	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	60,266	64,461	68,859	76,131	80,991
Prince Edward Island.....	13,819	16,093	17,877	19,200	19,325
Nova Scotia.....	90,532	92,225	102,259	113,788	113,667
New Brunswick.....	77,343	86,628	84,255	90,121	94,623
Quebec.....	605,035	640,711	758,110	864,589	948,355
Ontario.....	778,460	833,128	927,113	1,095,310	1,181,895
Manitoba.....	99,814	104,145	118,020	130,615	136,233
Saskatchewan.....	145,658	148,920	156,651	201,283	216,907
Alberta.....	278,882	245,483	272,978	293,917	319,708
British Columbia.....	313,758	320,288	346,420	363,927	398,490
Yukon Territory.....	2,082	2,308	2,357	3,423	4,183
Northwest Territories.....	1,597	1,744	1,861	3,510	4,170
<b>Canada.....</b>	<b>2,467,236</b>	<b>2,556,134</b>	<b>2,856,760</b>	<b>3,255,814</b>	<b>3,518,547</b>
<b>NET GENERAL EXPENDITURE<sup>1</sup></b>					
	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	64,863	74,713	83,559	100,868	105,216
Prince Edward Island.....	20,049	15,386	19,351	22,545	22,499
Nova Scotia.....	91,804	111,689	107,559	113,180	125,408
New Brunswick.....	79,630	94,868	94,719	100,954	112,045
Quebec.....	600,942	749,296	847,612	951,953	1,096,815
Ontario.....	898,230	937,308	1,036,709	1,172,444	1,240,240
Manitoba.....	127,695	137,055	137,237	146,479	162,238
Saskatchewan.....	142,248	150,027	158,744	178,992	208,857
Alberta.....	234,657	266,314	279,128	282,263	276,034
British Columbia.....	283,163	331,476	338,567	356,867	392,370
Yukon Territory.....	2,297	2,610	2,925	4,934	4,616
Northwest Territories.....	1,354	2,033	2,167	3,951	4,027
<b>Canada.....</b>	<b>2,546,932</b>	<b>2,872,775</b>	<b>3,108,277</b>	<b>3,435,430</b>	<b>3,750,365</b>

<sup>1</sup> Excludes debt retirement.

## 24.—Net General Revenue of Provincial Governments, Year Ended Mar. 31, 1964

Source	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Taxes—</b>													
Corporations.....	404	106	978	768	33,323	17,391	1,399	1,036	2,365	3,144	—	—	60,914
Income—													
Corporations.....	3,858	592	6,470	4,919	121,444	192,302	14,965	9,889	23,693	34,104	—	—	412,236
Individuals.....	3,356	633	7,715	5,155	106,051	164,370	21,442	16,076	23,126	39,358	—	—	389,282
Property.....	—	—	96	451	—	1,404	—	7	—	6,498	304	29	9,089
<b>Sales—</b>													
Alcoholic beverages.....	1	465	1	1	—	—	—	1	—	1	84	—	549
Amusements and admissions.....	105	70	372	282	9,099	13,253	958	119	943	1,761	15	—	26,977
Motor fuel and fuel oil.....	9,043	3,128	20,577	17,020	150,832	194,708	25,212	30,118	38,440	48,941	450	538	539,007
Tobacco.....	1	353	1	2,051	24,984	1	2,842	1	—	—	—	—	530,240
General.....	16,113	2,843	17,716	10,850	167,797	190,342	—	45,167	—	111,193	—	—	562,091
Other commodities and services.....	—	—	395	—	11,937	44,121	—	—	2	—	—	—	12,352
Succession duties.....	—	—	1	—	36,383	94,258	12,840	17,349	—	5,161	—	—	85,019
Hospital insurance premiums.....	—	—	—	—	—	8,205	863	372	45	214	—	—	124,447
Other.....	320	2	101	100	2,300	8,205	—	—	—	—	—	—	12,522
<b>Totals, Taxes.....</b>	<b>33,199</b>	<b>8,192</b>	<b>54,420</b>	<b>41,596</b>	<b>684,170</b>	<b>920,354</b>	<b>80,521</b>	<b>120,135</b>	<b>90,614</b>	<b>250,674</b>	<b>853</b>	<b>567</b>	<b>2,205,295</b>
<b>Government of Canada—</b>													
Statutory subsidies.....	1,656	657	2,132	1,745	3,964	4,624	2,103	2,120	2,852	1,673	—	—	23,526
Fed-Prop. Fiscal Arrangements Act 1962.....	33,761	7,393	31,842	27,916	70,216	—	15,896	23,592	10,452	—	1,923	2,378	225,179
Share of income tax on power utilities.....	196	54	638	40	4,623	1,019	46	9	2,742	501	—	—	9,868
<b>Totals, Government of Canada.....</b>	<b>35,613</b>	<b>8,104</b>	<b>34,612</b>	<b>29,701</b>	<b>78,803</b>	<b>5,643</b>	<b>18,045</b>	<b>25,721</b>	<b>16,046</b>	<b>1,984</b>	<b>1,923</b>	<b>2,378</b>	<b>258,573</b>
<b>Privileges, Licences and Permits—</b>													
Liquor control and regulation.....	2,603	26	316	270	19,665	27,429	3,210	104	1,180	606	11	82	55,502
Motor vehicles.....	9,099	854	6,425	5,798	50,033	87,298	10,412	8,955	14,890	22,691	216	91	210,762
Natural resources.....	1,637	14	1,422	3,860	45,504	39,751	5,196	32,296	158,488	78,368	35	46	366,617
Other.....	915	119	754	989	12,806	10,762	2,159	1,626	2,960	3,182	115	34	36,421
<b>Totals, Privileges, Licences and Permits.....</b>	<b>8,254</b>	<b>1,013</b>	<b>8,917</b>	<b>10,917</b>	<b>128,008</b>	<b>165,240</b>	<b>20,977</b>	<b>42,081</b>	<b>177,518</b>	<b>104,847</b>	<b>377</b>	<b>253</b>	<b>669,302</b>
<b>Sales and services.....</b>	<b>403</b>	<b>399</b>	<b>2,185</b>	<b>1,767</b>	<b>11,711</b>	<b>16,023</b>	<b>2,484</b>	<b>5,943</b>	<b>6,150</b>	<b>6,841</b>	<b>76</b>	<b>35</b>	<b>54,017</b>
Fines and penalties.....	363	72	316	318	2,195	2,712	614	1,036	1,988	966	31	25	10,681
Liquor profits.....	2,783	1,408	13,096	10,099	45,600	70,748	13,233	15,711	25,807	32,514	915	903	232,877
Other revenue.....	51	22	36	93	10,214	520	23	5,060	1,412	354	4	4	17,793
<b>Totals, excluding Non-revenue and Surplus Receipts.....</b>	<b>80,666</b>	<b>19,300</b>	<b>113,597</b>	<b>94,491</b>	<b>940,701</b>	<b>1,181,240</b>	<b>135,897</b>	<b>216,557</b>	<b>319,535</b>	<b>398,180</b>	<b>4,179</b>	<b>4,165</b>	<b>3,508,538</b>
<b>Non-revenue and surplus receipts.....</b>	<b>325</b>	<b>25</b>	<b>70</b>	<b>132</b>	<b>7,654</b>	<b>655</b>	<b>336</b>	<b>320</b>	<b>173</b>	<b>310</b>	<b>4</b>	<b>5</b>	<b>10,009</b>
<b>Totals, Net General Revenue.....</b>	<b>80,991</b>	<b>19,325</b>	<b>113,667</b>	<b>94,623</b>	<b>948,355</b>	<b>1,181,895</b>	<b>136,233</b>	<b>216,907</b>	<b>319,708</b>	<b>398,490</b>	<b>4,183</b>	<b>4,170</b>	<b>3,518,547</b>

1 Taxed under the general sales tax.



25.—Net General Expenditure of Provincial Governments, Year Ended Mar. 31, 1964

Function	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
General Government.....	5,169	1,359	5,339	4,644	45,305	50,422	5,451	8,563	6,349	20,375	499	117	153,562
Protection of Persons and Property.....	3,914	506	3,670	2,967	51,657	59,573	7,132	7,964	16,207	17,110	361	739	172,100
Transportation and Communications—													
Highways, roads and bridges.....	22,844	6,587	30,314	30,357	196,033	282,129	30,507	30,833	60,096	93,740	757	226	784,512
Waterways.....	95	14	400	589	452	—	46	387	298	2,107	36	—	4,424
Other.....	—	6	55	—	489	—	—	510	—	—	—	7	1,067
Totals, Transportation and Communications.....	22,939	6,607	30,769	30,976	197,024	282,129	30,553	31,730	60,394	95,856	793	233	790,003
Health and Social Welfare—													
Health—													
General health.....	212	85	133	345	4,323	4,126	733	695	936	1,340	10	20	12,879
Public health.....	783	420	2,229	1,929	24,934	10,220	2,742	4,014	1,150	4,749	195	459	53,804
Medical, dental and allied services.....	1,959	140	202	194	2,793	2,554	1,647	24,038	4,037	—	—	—	43,041
Hospital care.....	13,280	2,354	21,359	21,112	151,125	208,734	33,396	37,661	42,226	50,551	429	283	582,490
Social Welfare—													
Aid to aged persons.....	2,036	764	2,315	2,335	23,511	14,982	2,811	7,312	7,768	14,100	7	53	78,084
Aid to blind persons.....	104	18	166	151	659	492	143	215	1,152	300	1	9	2,411
Aid to unemployed and unemployables.....	8,770	213	4,892	2,225	38,730	21,531	3,606	6,013	10,852	10,890	41	94	105,856
Mothers' allowances.....	—	213	—	2,023	22,538	11,130	—	1,010	—	—	—	—	36,914
Child welfare.....	576	185	968	547	30,792	6,482	2,445	1,400	3,032	4,047	52	—	50,588
Labour.....	79	13	153	327	4,071	2,091	370	431	737	516	1	—	8,389
Other social welfare.....	1,202	74	68	459	11,048	4,594	1,801	2,629	2,842	2,135	97	14	26,963
Totals, Health and Social Welfare.....	29,001	4,478	32,485	30,647	314,524	286,946	49,694	84,226	74,436	94,145	833	984	1,002,399
Recreational and Cultural Services.....	365	247	978	593	4,241	12,769	850	3,394	2,937	3,202	44	72	29,632
Education—													
Schools operated by local authorities.....	20,530	3,752	23,987	12,465	202,333	265,433	28,682	39,481	78,022	71,630	1,528	1,441	749,284
Universities, colleges and other schools.....	6,640	1,070	5,084	5,860	104,105	94,872	8,196	11,052	9,552	17,468	—	13	263,952
Education of the handicapped.....	252	29	213	531	5,345	5,345	355	217	734	3,881	—	2	8,969
Superannuation and pensions.....	—75	3	2,257	316	—678	20,768	306	1,281	1	—	—	—	28,060
Other.....	701	164	539	363	27,677	5,271	1,400	962	1,040	1,064	1	6	39,188
Totals, Education.....	28,048	5,018	32,080	19,235	333,942	391,689	38,939	52,993	89,389	95,129	1,529	1,462	1,089,453

25.—Net General Expenditure of Provincial Governments, Year Ended Mar. 31, 1964—concluded

Function	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Natural Resources and Primary Industries—													
Fish and game.....	1,791	117	285	444	8,757	3,393	556	402	919	1,457	29	80	18,230
Forests.....	882	125	1,374	2,872	17,217	21,140	1,170	557	6,136	15,901	5	—	67,379
Lands: settlement and agriculture.....	995	866	1,659	1,514	36,136	11,122	8,306	8,281	7,335	5,038	—	—	81,252
Minerals and mines.....	145	1	641	266	2,781	1,555	509	1,529	3,506	2,187	—	—	13,420
Water resources.....	—	—	28	55	2,489	4,043	7,599	1,922	1,599	908	42	—	18,776
Other.....	285	55	169	388	2,603	1,000	1,365	2,295	587	214	—	—	8,961
<b>Totals, Natural Resources and Primary Industries.....</b>	<b>4,098</b>	<b>1,164</b>	<b>4,156</b>	<b>5,539</b>	<b>69,983</b>	<b>42,553</b>	<b>19,496</b>	<b>14,986</b>	<b>20,182</b>	<b>25,705</b>	<b>76</b>	<b>80</b>	<b>208,018</b>
Trade and industrial development.....	500	309	1,354	805	9,482	6,944	1,214	2,008	1,986	1,443	52	6	26,103
Local government planning and development.....	370	51	160	364	1,034	2,293	783	1,584	1,510	303	85	83	8,570
Debt charges excluding debt retirement.....	7,979	2,193	12,553	9,753	42,171	62,126	4,626	-1,779	-16,225	-1,370	178	—	122,505
Unconditional grants to local governments.....	1,907	447	1,332	6,357	250	35,623	2,990	10	16,682	13,353	143	97	79,226
Contributions to government enterprises.....	788	—	—	58	—	824	—	—	—	2,119	—	—	3,789
Other expenditure.....	138	112	184	63	19,470	4,613	299	1,076	1,486	25,111	—	204	52,756
<b>Totals, excluding Non-expenditure and Surplus Payments.....</b>	<b>105,216</b>	<b>22,491</b>	<b>125,360</b>	<b>112,031</b>	<b>1,089,063</b>	<b>1,238,804</b>	<b>162,027</b>	<b>206,695</b>	<b>275,333</b>	<b>392,461</b>	<b>4,598</b>	<b>4,027</b>	<b>3,738,146</b>
Non-expenditure and surplus payments.....	—	8	48	14	7,732	1,436	211	2,162	701	-111	18	—	12,219
<b>Totals, Net General Expenditure (excluding debt retirement).....</b>	<b>105,216</b>	<b>22,499</b>	<b>125,408</b>	<b>112,045</b>	<b>1,096,815</b>	<b>1,240,240</b>	<b>162,238</b>	<b>208,857</b>	<b>276,034</b>	<b>392,370</b>	<b>4,616</b>	<b>4,027</b>	<b>3,750,365</b>

22.—Amounts Paid to Other Governments by Provincial Governments, Year Ended Mar. 31, 1964

Nature of Payment	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Paid to Local Governments—</b>													
Shared-revenue contributions <sup>1</sup> .....	—	379	10	—	—	1,273	—	—	220	—	—	—	1,503
Subsidies.....	1,907	—	1,322	6,374	250	32,139	2,724	—	15,000	13,353	148	97	73,693
Grants in lieu of local taxes on provincial government property <sup>2</sup> .....	—	68	—	13	—	2,211	266	10	1,462	—	—	—	4,030
<b>Grants-in-Aid and Shared-Cost Contributions—</b>													
Corrections.....	—	—	—	33	—	14	—	—	—	—	—	—	47
Police protection.....	—	—	—	—	—	310	—	—	—	—	—	—	623
Fire protection.....	—	—	—	—	1,100	198	—	—	313	—	—	—	1,300
Other protection.....	—	—	5	—	25	454	—	—	—	—	—	—	484
Highways, roads and bridges.....	287	51	209	294	7,532	87,618	3,094	7,009	6,183	471	49	25	112,822
Public health.....	66	—	47	—	6,097	3,304	90	100	1,640	322	—	—	11,756
Medical, dental and allied services.....	—	—	—	—	6	42	110	—	—	—	—	—	158
Hospital care <sup>3</sup> .....	—	—	843	652	—	—	—	3	—	—	—	—	1,498
Aid to aged persons (homes).....	—	—	—	—	—	8,097	—	—	—	—	—	—	8,123
Aid to unemployed and unemployables.....	—	—	1,609	2,088	—	26,268	2,340	5,865	2,736	19,888	—	20	60,844
Child welfare.....	—	—	—	295	—	4,779	—	1	—	—	—	—	5,075
Other health and social welfare.....	—	—	—	—	—	285	28	—	—	—	—	—	314
Parks, beaches and other recreational areas.....	—	—	—	10	—	453	—	43	14	—	—	—	520
Other recreational and cultural services.....	—	—	—	—	—	640	—	—	—	—	—	—	644
Schools operated by local authorities <sup>4</sup> .....	5	3,536	22,158	11,645	200,089	319,469	29,359	37,634	75,029	68,384	4	173 <sup>7</sup>	767,476
<b>Lands—</b>													
Settlement and agriculture.....	—	—	1	7	305	820	340	177	210	81	—	—	1,941
Other.....	—	—	—	5	38	65	196	1,302	—	—	—	—	1,606
<b>Local government planning and development—</b>													
Civil defence.....	—	—	105	223	—	439	9	239	252	10	—	—	1,172
Winter works projects.....	255	130	112	106	307	1,269	—	—	178	591	—	—	2,556
Other payments.....	—	—	—	—	21,278	7,783	1,331	2,845	4,290	5,722	—	37	43,783
	—	—	—	1	5,446 <sup>8</sup>	22	—	11	—	1	—	1	5,482
<b>Totals, Paid to Local Governments.</b>	<b>2,515</b>	<b>4,166</b>	<b>26,421</b>	<b>21,746</b>	<b>242,473</b>	<b>497,952</b>	<b>39,887</b>	<b>55,360</b>	<b>107,527</b>	<b>108,849</b>	<b>201</b>	<b>353</b>	<b>1,107,450</b>
<b>Paid to Government of Canada—</b>													
Police services—RCMP.....	901	150	888	646	—	—	1,277	1,370	1,843	2,326	—	—	9,410
Other <sup>9</sup> .....	—	—	—	—	160	35	—	1,126	—	—	—	—	1,321
<b>Totals, Paid to All Governments.....</b>	<b>3,416</b>	<b>4,325</b>	<b>27,309</b>	<b>22,392</b>	<b>242,633</b>	<b>497,987</b>	<b>41,164</b>	<b>57,856</b>	<b>109,370</b>	<b>111,175</b>	<b>201</b>	<b>353</b>	<b>1,118,181</b>

<sup>1</sup> N.S.—Share of Crown land leases; Ont.—share of liquor licences; Alta.—share of liquor fines.  
<sup>2</sup> Does not include grants in lieu of taxes paid by provincial government enterprises.  
<sup>3</sup> Excludes amounts paid directly to municipal hospital boards.  
<sup>4</sup> Includes grants paid directly to teachers in P.E.I., N.B. and Que. by the territorial government and by religious denominations.  
<sup>5</sup> Local schools are operated by the Federal Government, religious denominations and school districts.  
<sup>6</sup> The amount shown above was paid to school districts.  
<sup>7</sup> Local schools are operated by the City of Montreal and the Montreal Metropolitan Corporation.  
<sup>8</sup> Consists of: Quebec—Department of Northern Affairs and National Resources \$10,000; Department of Mines and Technical Surveys—Aeromagnetic Surveys \$150,000; Ontario—annuities and bonuses to Indians \$35,000; Saskatchewan—South Saskatchewan River Dam Project agreement \$1,024,000; Airborne Geophysical program \$100,000; Department of Northern Affairs and National Resources—water rights \$2,000.  
<sup>9</sup> Consists of: Quebec—Department of Northern Affairs and National Resources—water rights \$2,000.



**Debt of Provincial Governments.**—Table 27 shows total bonded debt, by province, as at Mar. 31, 1963-65. Table 28 shows that the majority of bond issues are payable in Canada. Table 29 provides details of total direct and indirect debt of provincial governments as at Mar. 31, 1965.

**27.—Gross Bonded Debt (exclusive of Treasury Bills) of Provincial Governments, as at Mar. 31, 1963-65**

Province and Year	Bonded Debt	Average Interest Rate	Average Term of Issue	Province and Year	Bonded Debt	Average Interest Rate	Average Term of Issue
	\$'000	p.c.	yrs.		\$'000	p.c.	yrs.
Newfoundland—				Ontario—concluded			
1963.....	139,378	5.38	19.2	1964.....	1,937,320	4.29	21.6
1964.....	154,364	5.41	20.0	1965.....	2,047,107	4.35	21.4
1965.....	180,400	5.48	20.8				
Prince Edward Island—				Manitoba—			
1963.....	31,110	4.75	15.5	1963.....	294,328	4.34	16.4
1964.....	31,604	5.02	16.7	1964.....	301,610	4.36	15.9
1965.....	37,904	5.10	17.3	1965.....	295,149	4.43	16.2
Nova Scotia—				Saskatchewan—			
1963.....	341,470	4.22	18.3	1963.....	530,815	4.63	18.7
1964.....	344,171	4.36	18.6	1964.....	559,120	4.69	19.0
1965.....	365,282	4.37	19.4	1965.....	595,740	4.46	18.9
New Brunswick—				Alberta—			
1963.....	262,590	4.26	18.8	1963.....	12,915	2.82	18.1
1964.....	262,980	4.38	19.4	1964.....	10,983	2.83	18.8
1965.....	284,984	4.50	20.3	1965.....	9,480	2.84	19.5
Quebec—				British Columbia—			
1963.....	781,975	4.52	18.5	1963.....	74,207	3.42	24.1
1964.....	974,957	4.74	17.2	1964.....	74,007	3.42	24.2
1965.....	1,085,728	4.94	17.4	1965.....	70,411	3.44	24.6
Ontario—				<b>Totals—</b>			
1963.....	1,871,610	4.20	21.5	1963.....	4,340,398	4.35	19.8
				1964.....	4,651,116	4.47	19.6
				1965.....	4,972,185	4.57	19.7

**28.—Gross Bonded Debt<sup>1</sup> (exclusive of Treasury Bills) of Provincial Governments, by Place of Payment, as at Mar. 31, 1963-65**

Payable in—	1963	1964	1965
	\$'000	\$'000	\$'000
Canada.....	3,316,134	3,672,442	3,939,482
Britain.....	—	—	—
Britain and Canada.....	2,974	—	—
United States.....	894,212	884,910	945,146
United States and Canada.....	66,076	52,148	50,654
Britain, United States and Canada.....	51,899	32,513	27,800
Switzerland.....	9,103	9,103	9,103
<b>Totals.....</b>	<b>4,340,398</b>	<b>4,651,116</b>	<b>4,972,185</b>

<sup>1</sup> Excludes bonds assumed by the provinces.

## 23.—Provincial Government Direct and Indirect Debt (less Sinking Funds), as at Mar. 31, 1965

Direct and Indirect Debt	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Direct Debt—</b>													
Funded Debt—													
Bonded debt.....	180,400	37,904	385,282	284,984	1,085,728	2,047,107 <sup>1</sup>	295,149	595,740	9,480 <sup>2</sup>	70,411	—	—	4,972,185
Less sinking funds.....	121,217	5,923	85,952	75,357	124,141	184,821	60,335	108,232	—	70,411	—	—	705,389
Net bonded debt.....	59,183	31,981	279,330	209,627	961,587	1,862,286	234,814	487,508	9,480	—	—	—	4,266,796
Net treasury bills (term of 2 or more years).....	—	—	—	8,236	60,000	—	21,809	29,910	6,310	—	—	—	120,265
<b>Net Funded Debt.....</b>	<b>59,183</b>	<b>31,981</b>	<b>279,330</b>	<b>217,863</b>	<b>1,021,587</b>	<b>1,862,286</b>	<b>256,623</b>	<b>511,418</b>	<b>15,790</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>4,386,061</b>
Short-term treasury bills (term of less than 2 years).....	—	7,300	10,500	11,800	40,000	—	63,485	16,500	—	6,283	—	—	149,585
Temporary loans and overdrafts.....	19,326	8,822	13,772	—	—	—	12,485	6,637	—	13,915	—	—	67,325
Trust funds, savings and other deposits.....	4,814	285	1,317	1,317	348	228,462	3,116	7,252	20	25,066	83	—	251,753
Accounts and other payables.....	24,677	2,428	17,987	11,658	216,200 <sup>3</sup>	83,269 <sup>4</sup>	3,116	7,252	16,038	—	7,553	3,894	419,153
Accrued interest and other accrued expenditure.....	346	—	4,078	6,877	24,659	50,109	19,291	7,532	103	—	—	—	112,995
<b>Totals, Direct Debt (less Sinking Funds)</b>	<b>203,532</b>	<b>55,345</b>	<b>325,952</b>	<b>249,515</b>	<b>1,302,794<sup>5</sup></b>	<b>2,254,126</b>	<b>357,518</b>	<b>549,340</b>	<b>31,951</b>	<b>45,264<sup>6</sup></b>	<b>7,651</b>	<b>3,894</b>	<b>5,386,882</b>
<b>Indirect Debt—</b>													
Guaranteed bonds or debentures.....	23,412	8,125	3,296 <sup>6</sup>	111,527	1,890,005	1,771,389	392,205	16,719	430,602	1,470,062	—	—	6,117,312
Less sinking funds.....	—	—	759	1,301	51,420	49,294	13,482	—	12,197	92,729	—	—	221,182
Net guaranteed bonds or debentures.....	23,412	8,125	2,537	110,226	1,838,585	1,722,095	378,723	16,719	418,405	1,377,333	—	—	5,896,130
Guaranteed bank loans.....	22,869	8,251 <sup>7</sup>	2,286	5,524	3,798	5,773	—	5,395	1,938	734	—	—	56,568
Municipal Improvement Assistance Act loans.....	—	—	142	57	606	—	—	72	27	33	—	—	937
Other guarantees.....	3	—	—	—	—	—	—	2,741	4,854	7,150	—	—	14,748
<b>Totals, Indirect Debt (less Sinking Funds)</b>	<b>46,284</b>	<b>16,376</b>	<b>4,935</b>	<b>115,807</b>	<b>1,842,989</b>	<b>1,727,868</b>	<b>378,723<sup>8</sup></b>	<b>24,927</b>	<b>425,221<sup>9</sup></b>	<b>1,385,250</b>	<b>—</b>	<b>—</b>	<b>5,968,383</b>
<b>Totals, Direct and Indirect Debt (less Sinking Funds)</b>	<b>249,816</b>	<b>71,721</b>	<b>330,887</b>	<b>365,322</b>	<b>3,145,783</b>	<b>3,981,994</b>	<b>736,241</b>	<b>574,267</b>	<b>457,175</b>	<b>1,430,514</b>	<b>7,651</b>	<b>3,894</b>	<b>11,355,265</b>
Direct debt (less sinking funds) per capita.....	409	512	428	400	230	335	372	578	22	25	510	156	275
Indirect debt (less sinking funds) per capita.....	93	152	6	186	326	257	394	26	293	774	510	156	305

<sup>1</sup> Includes bonds issued by the Ontario Junior Farmer Establishment Loan Corporation \$20,000,000 and by the Ontario Municipal Improvement Corporation \$29,000,000. <sup>2</sup> Excludes bonds due \$2,000. <sup>3</sup> Includes debts assumed by the province as follows: Metropolitan Boulevard \$63,290,282, bonds issued by the Quebec Municipal Commission in the name of school corporations \$14,989,300, and loans contracted by certain Universitarian Institutions \$18,005,413. <sup>4</sup> Includes net liability of the province re Ontario Savings Office \$80,489,000 at Mar. 31, 1965. <sup>5</sup> Excludes debt of toll road authority. <sup>6</sup> Excludes bonds of the Halliwell-Dartmouth Bridge Commission \$5,546,000. <sup>7</sup> Amount authorized; information re amounts outstanding not available. <sup>8</sup> In addition, the province has guaranteed the interest on school district debentures having a par value of \$4,411,000, on sewage disposal and water supply debentures having a par value of \$2,670,000, and on principal of mortgage loans under the elderly persons housing act of \$711,000. <sup>9</sup> Excludes guaranteed interest under the School Borrowing Assistance Act and the School Building Assistance Act on principal borrowings of \$11,151,000.

## Section 6.—Municipal Government Finance

**Municipal Taxation.**—Table 30 shows, for the year 1963, local taxes levied by municipalities and by some school authorities and total taxes outstanding at the end of the year. Because of the considerable differences in the division of responsibility for services between the provincial governments and their respective municipalities, these figures should not be used as a basis for interprovincial comparisons of the relative burden of municipal taxation.

**30.—Municipal Taxation, by Province, 1963**

Item	New-found-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
Taxation revenue..... \$'000	5,778	3,488	45,979	36,799	429,037	743,999
Tax Collections, Current and Arrears—						
Total..... \$'000	5,267	3,246	43,938	35,163	419,512	741,428
Percentage of taxation revenue..... p.c.	91.16	93.06	95.56	95.55	97.78	99.65
Taxes receivable, current and arrears..... \$'000	2,666	1,013	15,672	13,082	80,872	81,263
Percentage of taxation revenue..... p.c.	46.14	29.04	34.08	35.55	18.85	10.92
	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon Territory	North-west Territories
Taxation revenue..... \$'000	88,540	93,632	143,173	161,566	227	412
Tax Collections, Current and Arrears—						
Total..... \$'000	86,184	91,806	138,597	161,436	223	405
Percentage of taxation revenue..... p.c.	97.34	98.05	96.80	99.92	98.23	98.30
Taxes receivable, current and arrears..... \$'000	15,727	19,661	26,802	8,831	113	114
Percentage of taxation revenue..... p.c.	17.76	21.00	18.72	5.47	49.78	27.67

**Municipal Revenue, Expenditure and Debt.**—Tables 31, 32 and 33 show comparative totals and details of current revenue and expenditure of municipal governments, by province, and Table 34 sets out the direct and indirect debt of local governments for the fiscal years ended nearest Dec. 31, 1963.

**31.—Current Revenue and Expenditure of Municipal Governments, by Province, Fiscal Years Ended Nearest Dec. 31, 1963**

Province	Current Revenue <sup>1</sup>	Current Expenditure <sup>2</sup>	Province or Territory	Current Revenue <sup>1</sup>	Current Expenditure <sup>2</sup>
	\$'000	\$'000		\$'000	\$'000
Newfoundland.....	9,130	9,260	Saskatchewan.....	126,600	125,417
Prince Edward Island.....	4,289	4,263	Alberta.....	207,266	206,768
Nova Scotia.....	60,507	60,460	British Columbia.....	231,624	228,281
New Brunswick.....	52,410	52,267	Yukon Territory.....	563	526
Quebec.....	510,519	518,772	Northwest Territories.....	708	699
Ontario.....	992,922	978,435			
Manitoba.....	111,201	110,987	<b>Canada.....</b>	<b>2,307,739</b>	<b>2,297,135</b>

<sup>1</sup> Includes surplus from previous years (see Table 32).  
33).

<sup>2</sup> Includes deficit from previous years (see Table



32.—Details of Current Revenue of Municipal Governments, Fiscal Years Ended Nearest Dec. 31, 1963

Source	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Taxes, General and School—													
Real property.....	3,305	2,741	34,443	25,063	299,526	721,649	73,727	86,967	122,840	146,506	187	333	1,517,317
Personal property.....	4	137	7,263	5,956		1	1	1					13,360
Business.....	1,252	396	1,841	1,929	28,420	1	6,339		7,774	3,762			51,733
Poll.....	187	135	1,523	3,237		82		51				6	5,221
Sales and amusement.....	935				59,881		504	1,114					62,434
Other.....	26	—	280	396	10,445		58	235		17			11,457
Special assessments (owners' share) and charges.....	69	79	629	188	30,765	22,268	7,912	5,265	12,559	11,261	40	73	91,108
Totals, Taxes.....	5,778	3,488	45,979	36,799	429,037	743,999	88,540	93,632	143,173	161,566	227	412	1,752,630
Licences and permits.....	190	59	441	344	7,473	8,150	1,798	2,626	3,762	7,007	49	8	31,907
Interest, tax penalties, etc.....	8	7	616	416	2,511	9,620	1,829	1,768	2,199	2,876	3	4	21,857
Contributions, Grants and Subsidies—													
Governments.....	1,658	511	9,510	12,805	22,464	160,989	10,892	13,936	27,654	37,247	242	235	298,443
Government enterprises.....	111	92	1,394	721	6,726	9,570	3,027	7,773	15,357	5,311	36	8	50,066
Other.....	539	1	439	46	3,542	669	653	894	102				7,729
Miscellaneous revenue.....	536	81	1,255	822	31,682	44,651	3,082	5,050	14,164	11,635	6	41	113,005
Totals, Revenue.....	9,420	4,239	59,544	51,953	503,435	977,648	109,821	125,679	206,441	236,486	563	708	2,275,637
Surplus from previous years.....	10	50	963	457	7,084	15,274	1,380	921	825	5,138	—	—	32,102
Grand Totals.....	9,430	4,289	60,507	52,410	510,519	992,922	111,201	126,600	207,266	231,624	563	708	2,307,739

1 Included with real property.

## 33.—Details of Current Expenditure of Municipal Governments, Fiscal Years Ended Nearest Dec. 31, 1963

Function	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
General government.....	1,011	279	3,760	3,334	53,721	59,690	8,150	7,703	12,547	12,100	63	97	162,458
Protection of persons and property.....	595	457	7,329	5,297	75,534	119,814	12,700	9,328	22,878	30,637	113	60	284,742
Public works.....	2,160	401	2,927	3,377	70,998	135,004	15,674	23,898	27,556	17,071	95	73	299,244
Sanitation and waste removal.....	883	33	1,255	776	13,566	42,938	3,348	2,999	6,487	7,488	62	32	79,867
Health.....	10	5	3,301	971	6,766	17,331	2,101	3,655	11,408	3,018	—	4	48,570
Social welfare.....	2	83	3,336	4,196	6,942	56,215	4,827	7,032	5,276	24,475	—	20	112,404
Education.....	389	1,471	20,297	21,405	106,420 <sup>1</sup>	298,623	33,221	41,473	55,141	56,078	—	208	604,726
Recreation and community services.....	214	74	933	1,068	18,015	37,103	3,712	4,423	8,083	11,085	14	30	84,754
Debt Charges— Debt and other long-term <sup>2</sup> .....	848	1,218	11,868	8,181	133,732	167,498	16,689	13,152	40,007	46,029	79	43	439,342
Other.....	226	44	577	617	1,665	12,895	370	436	555	798	—	—	18,183
Contributions to own government enterprises (deficits and levies).....	431	35	61	420	101	15,134	2,142	3,157	3,296	2,696	—	34	27,507
Provision for reserves.....	123	98	1,530	780	487	10,271	2,435	2,455	2,778	5,021	7	7	25,992
Contributions to capital and loan fund.....	2,191	46	2,114	378	28,120	19,081	2,837	3,799	6,750	10,495	85	62	75,948
Joint or special expenditure.....	—	—	—	—	—	3,859	267	—	148	—	—	—	4,274
Miscellaneous expenditure.....	177	19	613	1,440	3,705	11,750	1,058	1,891	3,697	1,290	8	20	25,668
<b>Totals, Expenditure.....</b>	<b>9,260</b>	<b>4,263</b>	<b>59,901</b>	<b>52,240</b>	<b>519,772</b>	<b>977,204</b>	<b>109,521</b>	<b>125,404</b>	<b>206,617</b>	<b>228,281</b>	<b>526</b>	<b>690</b>	<b>2,293,679</b>
Deficit from previous years.....	—	—	559	27	—	1,231	1,466	13	151	—	—	9	3,456
<b>Grand Totals.....</b>	<b>9,260</b>	<b>4,263</b>	<b>60,460</b>	<b>52,267</b>	<b>519,772</b>	<b>978,435</b>	<b>110,987</b>	<b>125,417</b>	<b>206,768</b>	<b>228,281</b>	<b>526</b>	<b>699</b>	<b>2,297,135</b>

<sup>1</sup> Estimated.  
estimated.<sup>2</sup> Charges on debentures issued for school purposes are included herein and not under Education as in 1960-62; for Quebec these charges have been

34.—Debt of Municipal and School Corporations, as at Fiscal Year Ends Nearest Dec. 31, 1963

Direct and Indirect Debt	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Direct Debt (less Sinking Funds)—</b>													
Debtenture debt.....	20,436	12,159	113,718	90,564	1,857,413 <sup>1</sup>	1,973,520	214,280	193,556	510,475	540,003	890	213	5,527,227
Less sinking funds.....	143	1,869	3,548	7,410	13,103	108,801	23,169	14,035	3,728	52,672	—	—	228,478
Net debtenture debt.....	20,293	10,290	110,170	83,154	1,844,310	1,864,719	191,111	179,521	506,747	487,331	890	213	5,298,749
Temporary loans and bank overdrafts.....	5,672	787	13,504	11,111	153,922	90,154	16,552	8,286	10,752	11,554	—	25	322,319
Accounts payable and other liabilities.....	8,133	471	12,922	7,823	186,339	237,261	23,326	22,902	34,448	33,998	101	162	567,886
<b>Totals, Direct Debt (less Sinking Funds).....</b>	<b>34,098</b>	<b>11,548</b>	<b>136,596</b>	<b>102,088</b>	<b>2,184,571</b>	<b>2,192,134</b>	<b>230,989</b>	<b>210,709</b>	<b>551,947<sup>2</sup></b>	<b>532,883</b>	<b>991</b>	<b>400</b>	<b>6,188,954</b>
<b>Indirect Debt (less Sinking Funds)—</b>													
Guaranteed bonds or debentures.....	—	—	1,308	5,131	—	2,439	2,462	—	—	—	—	—	11,340
Less sinking funds.....	—	—	369	—	—	—	—	—	—	—	—	—	369
Net guaranteed bonds or debentures.....	—	—	939	5,131	—	2,439	2,462	—	—	—	—	—	10,971
Guaranteed bank loans.....	—	—	—	—	—	—	—	—	21	—	—	—	21
<b>Totals, Indirect Debt (less Sinking Funds).....</b>	<b>—</b>	<b>—</b>	<b>939</b>	<b>5,131</b>	<b>—</b>	<b>2,439</b>	<b>2,462</b>	<b>—</b>	<b>21</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>10,992</b>
<b>Grand Totals.....</b>	<b>34,098</b>	<b>11,548</b>	<b>137,535</b>	<b>107,219</b>	<b>2,184,571</b>	<b>2,194,573</b>	<b>233,451</b>	<b>210,709</b>	<b>551,968</b>	<b>532,883</b>	<b>991</b>	<b>400</b>	<b>6,199,946</b>

<sup>1</sup> Includes \$49,775 debentures of the Montreal Transportation Commission guaranteed by the City of Montreal.<sup>2</sup> Includes debentures sold to the Alberta Municipal Financing Corporation; see footnote<sup>1</sup>, Table 29.



# CHAPTER XXIV.—TRENDS IN ECONOMIC AGGREGATES\*

## CONSPECTUS

	PAGE		PAGE
SECTION 1. NATIONAL ACCOUNTS.....	1068	Subsection 1. The Economic Council of Canada.....	1101
SECTION 2. INDUSTRY PRODUCTION TRENDS...	1080	Subsection 2. The Atlantic Development Board.....	1111
SECTION 3. AGGREGATE PRODUCTIVITY TRENDS	1086	Subsection 3. The Municipal Development and Loan Board.....	1114
SECTION 4. CANADIAN BALANCE OF INTERNATIONAL PAYMENTS.....	1089	Subsection 4. Provincial Government Economic Planning Agencies.....	1115
SECTION 5. CANADA'S INTERNATIONAL INVESTMENT POSITION.....	1095		
SECTION 6. GOVERNMENT ECONOMIC PLANNING AGENCIES.....	1101		

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

In this Chapter various statistical statements and studies are presented in which broad areas of Canadian economic activity are covered in a comprehensive but summary form. These integrated aggregative economic accounts provide an interrelated framework for economic analysis and the observation of changes in the functioning of the Canadian economy and its structure and in economic and financial relationships with other countries.

## Section 1.—National Accounts

The national accounts constitute a set of accounting summaries for the nation as a whole and portray economic activity in terms of transactions taking place between different sections of the economy. By combining and summarizing these operations into their various classes, information may be obtained on the functioning of the economy which is of particular interest to governments concerned with problems of full employment, taxation and prices, and to business men concerned with programs of investment and marketing.

This measurement of the nation's output is in terms of established market prices; hence it is necessary to keep in mind that the value of the nation's production may change because of price variations as well as through increase or decrease in volume of output.

Data are available showing volume changes in gross national expenditure in addition to the value figures. Gross national expenditure is shown in Table 4 in constant dollars (i.e., in terms of 1949 prices). Because the gross national expenditure equals the gross national product, these data also reflect volume changes in the production of goods and services as measured by the gross national product. In the other tables in which the data are expressed in current dollars, year-to-year changes must be considered in relation to price changes over the period.

\* Sections 1 and 2 were prepared in the National Accounts, Production and Productivity Division, and Sections 3, 4 and 5 in the Balance of Payments and Financial Flows Division of the Dominion Bureau of Statistics. Section 6 was prepared by the authorities concerned.

The tables on pp. 1075-1080 cover the more important aspects of the national income analysis in annual terms. Definitions are as follows:—

*National Income.*—Net national income at factor cost measures the current earnings of Canadian factors of production (i.e., land, labour, capital) from productive activity. It includes wages and salaries, profits, interest, net rent and net income of farm and non-farm unincorporated business.

*Gross National Product.*—Gross national product, by totalling all costs arising in production, measures the market value of all final goods and services produced in the current period by Canadian factors of production. It is equal to national income plus net indirect taxes (indirect taxes less subsidies), plus capital consumption allowances and miscellaneous valuation adjustments.

*Personal Income.*—Personal income is the sum of current receipts of income whether or not these receipts represent earnings from production. It includes transfer payments from government (such as family allowances, unemployment insurance benefits and war service gratuities) in addition to wages and salaries, net income of unincorporated business, interest and dividends and net rental income of persons. It does not include undistributed profits of corporations and other elements of the national income not paid out to persons.

*Gross National Expenditure.*—Gross national expenditure measures the same aggregate as gross national product, namely, total production of final goods and services at market prices, by tracing the disposition of production through final sales to persons, to governments, to business on capital account (including changes in inventories) and to non-residents (exports). Imports of goods and services, including net payments of interest and dividends to non-residents, are deducted since the purpose is to measure only Canadian production.

### Economic Activity in 1965

The momentum that has carried the gross national product (GNP) to successive new high levels since 1961 continued through 1965, when a 9.7-p.c. increase raised the current dollar value to \$52,000,000,000. As the expansion continued and the economy moved close to a full utilization of resources, price increases were more evident than in the preceding years and a 3-p.c. rise in price levels reduced the gain to 6.6 p.c. in real terms. Excluding agricultural income from GNP, the increase in 1965 of 9.6 p.c. was somewhat less than the 10.2-p.c. increase between 1963 and 1964.

During the first quarter of the year the rate of increase was unusually rapid, as a surge in inventory accumulation, following the previous quarter's disruption of supplies caused by strikes in the automobile industry, was coupled with increased demands in all other sectors with the exception of housing. The rate of growth eased in the following quarters but throughout the year all areas of demand continued strong with the exception of new housing construction where most of the recorded increase in value reflected increased prices. In the final quarter GNP gained 2 p.c. to end the year at \$53,800,000,000.

During 1965 as a whole there were gains over a wide range of economic activity. The scene was perhaps dominated by the strength of investment in non-residential construction and machinery and equipment, which were 17 p.c. above 1964 levels, with particular emphasis in the manufacturing industry and electric power, gas and water utilities. The capacity of the construction industry was strained during the year, for, in addition to business construction, government outlays on new fixed capital rose steeply; the latter are included in over-all government expenditure on goods and services which rose by 11 p.c., the main impetus coming from the provincial and municipal governments. Personal consumption once again accounted for the major part of the gain in GNP, as the increase of 8 p.c., buoyed by rapidly rising labour income and expansion of credit purchasing, contributed \$2,400,000,000 toward the total increase in GNP of \$4,600,000,000. The

demand for goods and services increased at the same rate, although, within goods, the relative strength of demand for durable goods was more pronounced, particularly for automobiles where sales continued to increase strongly for the fourth successive year.

Business investment in inventories, although easing off in each quarter, totalled \$905,000,000 for the year, appreciably higher than in 1964. However, the level of inventories and the over-all rate of accumulation when viewed against the levels of production did not appear to be unduly high.

The pressures on Canadian production of the vigorous expansion in domestic demand were somewhat moderated as part of the demand was met by a sharp increase in imports, particularly toward the latter part of the year. The deficit on current account transactions with non-residents increased to \$1,100,000,000 in 1965 from \$400,000,000, mainly as a result of a substantially lower growth in exports of goods combined with continued large increases in merchandise imports. Exports of goods continued to rise although at a less rapid pace than in 1964; the export gains were notable, however (allowing for the substantial decline in wheat sales), particularly in non-ferrous metals and automobiles and parts.

In response to the high level of demand, labour income rose rapidly throughout the year to average 11 p.c. above 1964, an increase attributable to expanded employment opportunities and to wage-rate increases in excess of those experienced in the previous year. Profits moved rather unevenly through the year to a new high, 8 p.c. above 1964; however, the fractional declines in the first and fourth quarters were in contrast to the uninterrupted gains recorded from the beginning of 1962.

As already noted, some acceleration of price increases was observed in 1965, as well as a broadening of the areas over which these increases were being experienced. In the consumer field, price increases in food and services were most significant, and price increases in construction appeared to be appreciably higher in non-residential work. At the same time, certain reductions should be noted in the selling prices of the motor vehicle industry, petroleum refineries and sugar refineries.

The robustness of the Canadian economy has gone hand in hand with increasing employment and gains in productivity, and against a background of economic expansion in the United States unprecedented in the postwar period.

**Components of Demand.**—Total consumer expenditure on goods and services reached \$32,100,000,000 in 1965, an increase of 8 p.c. over its 1964 value. The purchasing power to sustain this level came primarily from an 11-p.c. increase in labour income, while consumer debt outstanding continued to expand at about the same rate as in previous years. A 2-p.c. rise in consumer prices cut into the real gains for the period. The price rise was most pronounced in the service sector which registered an almost 3-p.c. increase for the year. A like increase in food prices was largely responsible for the advance in non-durable goods prices. New and used car prices declined about 1 p.c. while total durable goods prices declined fractionally.

The 1965 advance in total consumer expenditure, which was at a rate fractionally stronger than in the preceding year, was shared by all components. Outlays on both goods and services increased 8 p.c., the increase on services being a continuation of the pronounced rate of advance recorded in 1964. The value of durable goods purchased increased steadily as prices edged downward. Sales of new and used cars rose over 14 p.c. compared with the 12-p.c. gain shown in strike-affected 1964. Most of the major components of durable goods increased, particularly furniture and appliances and radios. Purchases of non-durable goods rose more than 7 p.c., with notable increases in several of the components—food expenditures increased almost 6 p.c., clothing  $6\frac{1}{2}$  p.c., and tobacco and alcoholic beverages 8 p.c. and 9 p.c., respectively.

Capital expenditures in 1965 were \$10,400,000,000, an amount  $14\frac{1}{2}$  p.c. higher than in 1964. Non-residential construction and machinery and equipment outlays rose 18 p.c. and 17 p.c., respectively, and housing rose less sharply, by 5 p.c. The pace of investment in business plant and equipment quickened noticeably in the second half of the year.



The strength in demand in 1965 for new capital spread to all major industrial groupings but was particularly pronounced in industries manufacturing chemicals and transportation equipment, in the paper and allied industries, in electric power and transportation utilities, and in financial and commercial services, the latter increase being partly related to preparations for Expo 67. New construction project outlays ran about one third higher in 1965 in manufacturing, electric power, gas and water utilities and in the private commercial and institutional service industries, and increased purchases of machinery and equipment were particularly heavy for railways and urban transit systems. During the past two years the distribution of capital spending has shifted to give greater emphasis to manufacturing than was evident at the commencement of the current expansion; in 1965, manufacturers' outlays were double those of 1961.

The value of residential building amounted to \$2,100,000,000, the gain of 5 p.c. over 1964 largely representing increased prices. Housing expenditures rose  $2\frac{1}{2}$  p.c. in the first half of 1965 over the latter half of 1964 but changed little in the second half of 1965 when the tightened supply of mortgage money contributed to a slowing down in the number of apartments started. Housing starts in 1965 were virtually unchanged at 166,600 and completions increased slightly to 153,000; the number of dwellings under construction was higher and stood at a record 120,000 at the year-end. The housing market was assisted by CMHC direct loans which helped to offset the decline in both conventional and NHA lending by institutions. Mortgage approvals in the last quarter of 1965 were considerably lower than the previous year's level. During 1965, as a result of the heavy construction program, pressures developed on construction wage and material costs. Costs rose by about 6 p.c. compared with an increase of about 4 p.c. in 1964.

Business capital spending plans for 1966, published in *Private and Public Investment in Canada, Outlook 1966*, indicate a substantial increase in investment; thus the sector is expected to add to domestic demand and cost pressures. However, some Federal Government budgetary measures, announced in late March, were aimed at restraining the expenditures on capital.

The tempo of investment in business inventories accelerated in 1965, amounting to \$905,000,000 compared with \$516,000,000 in 1964. Although this was by far the largest stock accumulation during the current economic expansion, the accumulation in relation to the levels of production does not appear to be unduly high. Investment in manufacturing and retail trade was the major force of expansion, contributing about 50 p.c. and 28 p.c., respectively, of the total accumulation. The quarterly pattern revealed that, after a substantial accumulation in the first quarter of the year, there was some slowing down in the rate of accumulation in the remainder of the year. The substantial build-up in the first quarter reflected, in part, unusually heavy restocking of automobiles in dealers' hands as a result of a sizable involuntary depletion in the previous quarter caused by strikes in the automobile industry.

The strongest influence in the 1965 accumulation was provided by the investment in manufacturers' durable goods, with significant increases in the stocks of primary metal, metal fabricating, machinery, transportation, and electrical goods-producing industries. Among non-durables, the increase in chemicals was notable but an offsetting movement in the stocks of other non-durable goods-producing industries left on balance a very small accumulation. The ratio of stock-to-shippments throughout the year remained below the average of the current expansion and slipped noticeably at the year-end. Almost all the increase in the rate of accumulation in the stocks of wholesale trade was accounted for by the durable lines, particularly in the industrial and transportation machinery and equipment group. The movements in the non-durables were mixed, leaving a very small accumulation. The stock-to-sales ratio for the year as a whole was below the average of the current expansion. A considerable amount of accumulation was concentrated in the holdings of retail traders. Modest increases in stocks were registered in non-durable goods, but there was a sharp accumulation in durable goods, concentrated mainly in the hands of motor vehicle dealers. The stock-to-sales ratio throughout the year was above the average of the current expansion.

During 1965 the deficit in Canada's external account jumped to \$1,141,000,000 from \$412,000,000 in 1964 (on a National Accounts basis). The change of \$729,000,000 resulted from a fall of \$599,000,000 in the surplus on merchandise trade as the increased demand for imports outpaced the growth in export sales, and a further deterioration of \$130,000,000 in non-merchandise trade; about 80 p.c. of the latter can be ascribed to higher deficits in the interest and dividend account and the freight and shipping account.

Export gains were made in live animals, crude materials such as metal ores, fabricated materials including pulp and paper and metals, and such products as machinery and transportation (cars, trucks and parts) and communication equipment. After showing little gain in the first part of the year compared with the latter half of 1964, exports climbed 8 p.c. in the second half of the year.

Domestic exports (on a Trade of Canada basis) were \$429,000,000 higher in 1965 than in 1964, a gain of \$568,000,000 in United States markets offsetting declines of \$25,000,000 and \$114,000,000 in United Kingdom and other markets. Fabricated materials and end-products contributed 43 p.c. and 36 p.c. of the gains made in the United States. A drop of \$214,000,000 in the category "food, feed, beverages and tobacco" accounted for the over-all decline in exports to markets outside the United States and the United Kingdom. Whereas shipments of wheat and flour under the first major contract with the Soviet Union were important throughout the first half of 1964, shipments on the second large contract began late in the third quarter of 1965.

Import statistics indicate strength in Canadian demand for imported fabricated chemicals, metal and metal products, machinery, transportation and communication equipment, and other equipment such as laboratory requirements and computers.

**The Government Sector.**—Total revenues of governments combined (excluding intergovernmental transfers) increased by \$1,676,000,000 to \$16,373,000,000, an 11½ p.c. advance over the 1964 total of \$14,697,000,000. Expenditures increased less sharply, by 9½ p.c. above the 1964 total, to \$16,127,000,000, resulting in a surplus of \$246,000,000 (on a National Accounts basis) compared to a small deficit of \$21,000,000 in 1964. The improvement in the over-all position was entirely at the federal level; because the increase in revenues was at a greater rate than the increase in expenditures, the surplus rose to \$568,000,000 from \$296,000,000 in 1964, making this the second consecutive year to record a federal surplus. The deficit at the provincial-municipal level of \$322,000,000 was little changed from 1964.

All components of government revenue increased over the year, reflecting the continued buoyancy and expansion of activity in the economy. The largest increases occurred in revenues from indirect taxes and personal direct taxes.

Total indirect tax revenue rose by approximately 12 p.c., with the Federal Government and the provincial-municipal governments sharing almost equally in the absolute increase. The major part of the gain at the federal level was in excise taxes, which increased 19 p.c. compared with 14 p.c. for all federal indirect taxes; this was in part a reflection of the final stage of the imposition of the higher excise tax on production equipment and building materials. Provincial revenues from gasoline and sales taxes rose by 11 p.c. and 16 p.c., respectively, partially caused by some upward revision in rates. The gain in property taxes, due to both increased rates and bases, accounted for most of the rise at the municipal level. Total corporate and personal direct taxes reached a level of \$6,076,000,000, an increase of 12 p.c. over 1964. Reflecting the sustained improvement in employment conditions and rising incomes, total revenue from federal and provincial personal income taxes was 13½ p.c. higher than in 1964, even after allowing for a reduction of about 10 p.c. in the federal personal income tax rates from July 1, 1965. The provincial share of personal income taxes increased markedly during the year, a reflection of the increased abatement under the terms of the Federal-Provincial Fiscal Arrangements Act.

Total expenditures of all levels of government (excluding intergovernmental transfers) advanced by approximately 10 p.c. or \$1,400,000,000 in 1965, most of the gain occurring at the provincial-municipal level. Outlays on goods and services, which increased by 11



p.c., were strongly reinforced by a 29-p.c. or \$533,000,000-increase in capital expenditure, with four fifths of the increase occurring at the provincial-municipal level. Provincial-municipal expenditures on goods and services rose sharply by approximately 13 p.c.; federal outlays on goods and services rose by over 7 p.c., accounted for by an increase of almost 14 p.c. in non-defence goods and services and a decrease of 1 p.c. in defence goods and services. Transfer payments to persons (excluding interest on the public debt) showed an increase of 9 p.c. The Federal Government recorded an increase of 3 p.c. but the increase at the provincial-municipal level was 15 p.c. The substantial increase by the provincial-municipal governments was caused by larger grants to hospitals and educational institutions.

**Price Movements.**—Over the past two years there was a moderate rise in the rate of over-all price increase. With prices advancing by nearly 3 p.c. between 1964 and 1965, the increase of 9.7 p.c. in the value of GNP was reduced to a gain of 6.6 p.c. when expressed in real terms.

In 1965 the price component of personal expenditure advanced by 2 p.c. compared with 1.6 p.c. in the preceding year. Prices associated with business gross fixed capital formation exhibited approximately the same rate of increase in both years, while prices for both exports and imports showed a smaller increase in 1965 than in 1964. Within personal expenditure, the components showed somewhat diverse movements. Durable goods prices declined fractionally compared with a 1-p.c. decline in 1964, the prices of new automobiles and appliances decreased by approximately 0.5 p.c. and the prices of furniture increased by 2 p.c. Food prices, increasing by about 2½ p.c. largely as the result of much higher meat prices brought about by short supply conditions in the United States, dominated the movement of non-durable goods prices. Prices of non-food commodities continued to increase by slightly less than 1 p.c. Prices of services rose by close to 3 p.c., reflecting advances of 3½ p.c. or more in all major components other than rents and communication-related services, both of which increased by about 0.5 p.c.

Prices associated with residential building showed somewhat lower increases than in 1964. This appeared to be associated with building material prices; the price index of lumber and its products increased by over 8 p.c. in 1964 but only 5 p.c. in 1965 and the prices of roofing materials increased by about 6 p.c. in 1964 but fell by 3 p.c. in 1965. The labour component of both the residential and non-residential price indexes increased by somewhat more in 1965 than the 4½-p.c. increase recorded in 1964. Shifting expenditure patterns affected machinery and equipment prices in both years; had a fixed pattern been used to estimate price changes, the increases in the prices of machinery and equipment would have been 3.3 p.c. in 1964 and 2.9 p.c. in 1965.

Within merchandise exports, price changes were somewhat diverse. The drop in the price of wheat early in 1965 was largely responsible for a 1½-p.c. price decline in the food, feed, beverages and tobacco group. Both the crude materials, inedible and the end-products, inedible groups increased by a little over 1 p.c. and the fabricated materials, inedible group gained 2 p.c. Within the latter group, the price of newsprint showed only a fractional change, while certain metal prices, responding to world market conditions, increased significantly.

The movement of merchandise import prices was again dominated by changes in the price of sugar, which declined by more than 50 p.c. relative to 1964. The fractional increase in the over-all import price index resulted from moderate increases in the crude materials, inedible and the end-products, inedible groups, an increase of approximately 3 p.c. in the fabricated materials group, and a decrease of over 16 p.c. in the food, feed, beverages and tobacco group.

**Income Flows.**—Wages, salaries and supplementary labour income totalled \$26,000,000,000 in 1965 and was 11 p.c. higher than in 1964. Labour income originating in the goods-producing industries advanced more rapidly than the service-producing group. The rise in labour income resulted in part from the continued sharp increase in employment in non-agricultural industries, where expanded job opportunities more than



absorbed new entries to the labour force, and the number of unemployed fell. Numbers in the labour force as a proportion of the population 14 years of age or over rose in 1965 to a level not achieved since the late 1940s. In addition to the increased numbers employed, there was an appreciable advance in average weekly wages and salaries.

Wages and salaries in the goods-producing industries rose  $12\frac{1}{2}$  p.c. with the largest gain (24 p.c.) occurring in construction where about two thirds of the increase resulted from a higher volume of labour input. The mining industry advanced 13 p.c. and the forestry and manufacturing groups each increased about  $10\frac{1}{2}$  p.c. Gains in mining, manufacturing and construction wage and salary payments were the largest recorded in the past decade. Wages and salaries in the service-producing industries were about  $10\frac{1}{2}$  p.c. above the 1964 total. The finance and service industries increased about  $12\frac{1}{2}$  p.c. and wages and salaries in trade advanced  $10\frac{1}{2}$  p.c. Somewhat smaller increases were recorded in the transportation, storage and communication group,  $8\frac{1}{2}$  p.c., and in government non-military wages and salaries,  $7\frac{1}{2}$  p.c.

Corporation profits (before taxes and before dividends paid to non-residents) reached a record level of \$5,200,000,000 in 1965 and were 8 p.c. higher than in 1964. Starting the year with a moderate first quarter (about level with the exceptionally high fourth quarter of 1964), profits continued to climb through the second and third quarters before levelling off in the fourth. Profits in the manufacturing group rose about 7 p.c. over 1964, general strength being evident in most industries. Of particular significance were the increases in food and beverages (8 p.c.) and metals (15 p.c.), the latter reflecting the return to more stable production conditions in the transportation equipment industry. These movements were partly offset by increased costs in the wood and paper industries, the profits of each of which declined 15 p.c.

There was a 9-p.c. rise in the profits of the transportation, storage and communication industry. The continued strength of consumer demand contributed to the 15-p.c. increase in retail trade profits, and wholesale trade profits showed an upward movement of 10 p.c. The performance of banks and the improved revenues of insurance carriers resulted in a 9-p.c. advance in the finance, insurance and real estate group. The profits of service industries continued to increase, moving up 22 p.c. in 1965; this rate was second only to that of 1962, the first full year of the current expansion. The marginal decline in the profits of the mining, quarrying and oil wells group was attributable to the irregularly high level of foreign dividend receipts in 1964.

Rents, interest and miscellaneous investment income increased by 9 p.c. over 1964, one of the larger increases in recent years. This item was marked by an increase in the government component, as the profits of government business enterprises and other investment income showed a notable rise. The increase was largest at the provincial level. Among the other investment income items, the rental income of persons showed mixed movements; residential rents declined, reflecting rising expenses, but the rental income of farms increased sharply.

Benefiting from strong second and third quarters, net income of non-farm unincorporated business in 1965 reached a level of \$2,877,000,000, 6 p.c. above the 1964 figure. The largest gain,  $7\frac{1}{2}$  p.c., was in service industries which contributed more than half of the total increase in the net income of non-farm unincorporated business.

Accrued net income of farm operators from farm production in 1965 was \$1,645,000,000, 12 p.c. higher than in 1964 but slightly lower than in the bumper-crop year 1963. Farm cash receipts, the largest component of farm income, increased 8 p.c. and farm operating expenses 5 p.c. over 1964; both items attained record levels. A large part of the increase in the accrued net income of farm operators can be attributed to considerably higher grain production. The value of crop production in 1965 was estimated at \$1,301,000,000, the third highest on record and close to 15 p.c. above 1964. On the other hand, value of grain marketings in 1965 was smaller than in 1964. Reflecting considerably higher receipts from sales of cattle, calves and hogs, livestock production increased 9 p.c. above the 1964 level. Sales of potatoes, dairy products and eggs also increased.

**Economic Activity in the First Nine Months of 1966**

For the first nine months of 1966, gross national product advanced 11.3 p.c. over the same period in 1965. Although this rate of advance in the value of GNP was higher than the 9.7 p.c. recorded in the full year 1965, in real terms the increases were 6.6 p.c. for both periods because of some acceleration in the rate of price rise. Within the year 1966, quarter-to-quarter increases in GNP became successively smaller, ranging from an unusually strong first-quarter advance of 4.5 p.c. to a third-quarter advance of 0.7 p.c.

In the nine-month comparison, final demand increased at a slightly greater rate than did the value of production and, as a consequence, there was an advance in imports of over 14 p.c. The strength in demand was broadly based, extending to all categories other than new housing, which increased only 4½ p.c. In contrast, business expenditures on plant and equipment rose 19 p.c., exports 17 p.c., government expenditures 15 p.c. and consumer spending 9 p.c.

Advances in the income components were more diverse; labour income increased 13 p.c. but profits showed virtually no change. Accrued net farm income rose 43 p.c. but net income of the unincorporated business sector increased only 3 p.c.

**1.—Gross National Product, in Current and Constant (1949) Dollars, 1937-65**

NOTE.—Comparable figures for 1927-36 are given in the 1965 Year Book, p. 1009.

Year	Millions of Current Dollars	Millions of Constant (1949) Dollars	Year	Millions of Current Dollars	Millions of Constant (1949) Dollars
1937.....	5,257	8,820	1952.....	23,995	20,027
1938.....	5,278	8,871	1953.....	25,020	20,794
1939.....	5,636	9,536	1954.....	24,871	20,186
1940.....	6,743	10,911	1955.....	27,132	21,920
1941.....	8,328	12,486	1956.....	30,585	23,811
1942.....	10,327	14,816	1957.....	31,909	24,117
1943.....	11,088	15,357	1958.....	32,894	24,397
1944.....	11,850	15,927	1959.....	34,915	25,242
1945.....	11,835	15,552	1960.....	36,287	25,849
1946.....	11,850	15,251	1961.....	37,471	26,515
1947.....	13,165	15,446	1962 <sup>r</sup> .....	40,575	28,287
1948.....	15,120	15,735	1963 <sup>r</sup> .....	43,424	29,740
1949.....	16,343	16,343	1964 <sup>r</sup> .....	47,403	31,663
1950.....	18,006	17,471	1965.....	51,996	33,770
1951.....	21,170	18,547			

**2.—National Income and Gross National Product, by Component, 1961-65**

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1122, and for later years in succeeding editions.

(Millions of dollars)

Item	1961	1962 <sup>r</sup>	1963 <sup>r</sup>	1964 <sup>r</sup>	1965
Wages, salaries and supplementary labour income.....	18,996	20,233	21,547	23,433	26,033
Military pay and allowances.....	550	586	598	583	587
Corporation profits before taxes <sup>1</sup> .....	2,841	3,235	3,574	4,106	4,448
Rent, interest and miscellaneous investment income.....	2,670	2,832	3,078	3,262	3,554
Accrued net income of farm operators from farm production <sup>2</sup> .....	1,008	1,496	1,721	1,464	1,645
Net income of non-farm unincorporated business <sup>3</sup> .....	2,274	2,401	2,551	2,720	2,877
Inventory valuation adjustment.....	-89	-130	-200	-131	-325
<b>Net National Income at Factor Cost.....</b>	<b>28,250</b>	<b>30,653</b>	<b>32,869</b>	<b>35,437</b>	<b>38,819</b>
Indirect taxes less subsidies.....	4,696	5,293	5,600	6,372	7,172
Capital consumption allowances and miscellaneous valuation adjustments.....	4,540	4,892	5,198	5,600	6,110
Residual error of estimate.....	-15	-263	-243	-6	-105
<b>Gross National Product at Market Prices.....</b>	<b>37,471</b>	<b>40,575</b>	<b>43,424</b>	<b>47,403</b>	<b>51,996</b>

<sup>1</sup> Excludes dividends paid to non-residents.  
net income of independent professional practitioners.

<sup>2</sup> Includes changes in farm inventories.

<sup>3</sup> Includes

## 3.—Gross National Expenditure, 1961-65

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1124, and for later years in succeeding editions.

(Millions of dollars)

Item	1961	1962*	1963*	1964*	1965
Personal expenditure on consumer goods and services.....	24,466	25,926	27,487	29,666	32,063
Government expenditure on goods and services.....	7,236	7,717	8,075	8,654	9,596
Current expenditure.....	5,699	5,962	6,273	6,813	7,222
Gross fixed capital formation.....	1,537	1,755	1,802	1,841	2,374
Business gross fixed capital formation.....	6,635	6,960	7,591	9,103	10,424
New residential construction.....	1,453	1,577	1,707	2,021	2,124
New non-residential construction.....	2,633	2,633	2,335	3,353	3,955
New machinery and equipment.....	2,494	2,745	3,049	3,724	4,345
Value of physical change in inventories.....	30	532	535	386	943
Non-farm business inventories.....	439	310	244	516	905
Farm inventories and grain in commercial channels.....	-409	222	291	-130	43
Export of goods and services.....	7,631	8,259	9,111	10,507	11,156
Deduct: Imports of goods and services.....	-8,542	-9,082	-9,618	-10,919	-12,297
Residual error of estimate.....	15	263	243	6	106
<b>Gross National Expenditure at Market Prices...</b>	<b>37,471</b>	<b>40,575</b>	<b>43,424</b>	<b>47,403</b>	<b>51,996</b>

## 4.—Gross National Expenditure in Constant (1949) Dollars, 1961-65

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1124, and for later years in succeeding editions.

(Millions of dollars)

Item	1961	1962*	1963*	1964*	1965
Personal expenditure on consumer goods and services.....	18,508	19,364	20,235	21,506	22,800
Government expenditure on goods and services.....	4,393	4,561	4,588	4,771	5,069
Current expenditure.....	3,227	3,274	3,317	3,478	3,551
Gross fixed capital formation.....	1,175	1,299	1,279	1,303	1,539
Adjusting entry.....	-9	-12	-8	-10	-21
Business gross fixed capital formation.....	4,272	4,361	4,615	5,305	5,820
New residential construction.....	941	989	1,035	1,162	1,164
New non-residential construction.....	1,693	1,633	1,693	1,227	2,138
New machinery and equipment.....	1,627	1,738	1,882	2,215	2,519
Adjusting entry.....	6	1	—	1	-1
Value of physical change in inventories.....	26	462	464	322	854
Non-farm business inventories.....	350	237	193	332	706
Farm inventories and grain in commercial channels.....	-34	258	325	-158	77
Adjusting entry.....	160	-33	-54	88	71
Exports of goods and services.....	6,224	6,534	7,118	8,051	8,452
Deduct: Imports of goods and services.....	-6,845	-6,992	-7,188	-8,064	-9,042
Residual error of estimate.....	11	182	165	4	68
Adjusting entry.....	-74	-185	-257	-232	-251
<b>Gross National Expenditure in Constant (1949) Dollars.....</b>	<b>26,515</b>	<b>28,257</b>	<b>29,740</b>	<b>31,663</b>	<b>33,770</b>
Index of gross national expenditure (1949=100).....	162.2	173.1	182.0	193.7	206.6



## 5.—Year-to-Year Percentage Change in Gross National Expenditure, 1961-65

Item	1961	1962	1963	1964	1965
	p.c.	p.c.	p.c.	p.c.	p.c.
<b>Personal Expenditure on Consumer Goods and Services—</b>					
Value.....	3.9	6.0	6.0	7.9	8.1
Volume.....	3.1	4.6	4.5	6.3	6.0
Price.....	0.8	1.3	1.4	1.6	2.0
<b>Government Expenditure on Goods and Services—</b>					
Value.....	6.9	6.6	4.6	7.2	10.9
Volume.....	4.7	3.8	0.5	4.0	6.2
Price.....	2.1	2.7	4.1	3.1	4.4
<b>Current Expenditure—</b>					
Value.....	9.6	4.6	5.2	8.6	6.0
Volume.....	5.3	1.5	1.4	4.8	2.0
Price.....	4.2	3.1	3.8	3.6	3.9
<b>Gross Fixed Capital Formation—</b>					
Value.....	-2.1	14.2	2.7	2.2	29.0
Volume.....	3.1	10.6	-1.6	1.8	18.2
Price.....	-5.0	3.3	4.3	0.3	9.2
<b>Business Gross Fixed Capital Formation—</b>					
Value.....	-0.9	4.9	9.1	19.9	14.5
Volume.....	-1.7	2.1	5.8	14.9	9.7
Price.....	0.8	2.8	3.1	4.4	4.3
<b>New Residential Construction—</b>					
Value.....	1.0	8.2	8.2	18.4	5.1
Volume.....	0.4	5.0	4.7	12.3	0.2
Price.....	0.6	2.9	3.4	5.5	4.9
<b>New Non-residential Construction—</b>					
Value.....	4.1	-1.7	7.5	18.4	17.8
Volume.....	3.7	-3.8	4.0	13.5	10.9
Price.....	0.4	2.2	3.4	4.4	6.1
<b>New Machinery and Equipment—</b>					
Value.....	-6.7	10.1	11.1	22.1	16.7
Volume.....	-8.0	6.8	8.3	17.7	13.7
Price.....	1.5	3.0	2.6	3.8	2.6
<b>Exports of Goods and Services—</b>					
Value.....	8.9	8.2	10.3	15.3	6.2
Volume.....	7.2	5.0	9.0	13.1	5.0
Price.....	1.6	3.1	1.2	1.9	1.2
<b>Imports of Goods and Services—</b>					
Value.....	4.5	6.3	5.9	13.5	12.6
Volume.....	1.4	2.1	2.9	12.2	12.1
Price.....	3.0	4.1	2.9	1.2	0.4
<b>Gross National Expenditure at Market Prices—</b>					
Value.....	3.3	8.3	7.0	9.2	9.7
Volume.....	2.6	6.7	5.1	6.5	6.6
Price.....	0.7	1.5	1.8	2.5	2.9

## 6.—Personal Income, by Source and by Province, 1961-65

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1125, and for later years in succeeding editions.

(Millions of dollars)

Item	1961	1962 <sup>*</sup>	1963 <sup>*</sup>	1964 <sup>*</sup>	1965
<b>Source</b>					
<b>Wages, salaries and supplementary labour income.....</b>	18,996	20,233	21,547	23,433	26,033
Deduct: Employer and employee contributions to social insurance and government pension funds.....	-787	-812	-852	-912	-959
Military pay and allowances.....	550	586	598	583	587
Net income received by farm operators from farm production.....	978	1,490	1,582	1,353	1,689
Net income of non-farm unincorporated business.....	2,274	2,401	2,551	2,720	2,877
Interest, dividends and net rental income of persons.....	3,030	3,305	3,616	3,799	4,129
Transfer Payments (excluding interest)—					
From governments.....	3,441	3,725	3,848	4,133	4,502
Charitable contributions from corporations.....	40	44	44	44	44
<b>Totals, Personal Income.....</b>	<b>28,522</b>	<b>30,972</b>	<b>32,934</b>	<b>35,153</b>	<b>38,902</b>

## 6.—Personal Income, by Source and by Province, 1961-65—concluded

Item	1961	1962 <sup>*</sup>	1963 <sup>*</sup>	1964 <sup>*</sup>	1965
<b>Province</b>					
Newfoundland.....	428	449	484	523	584
Prince Edward Island.....	101	111	118	132	148
Nova Scotia.....	882	934	981	1,041	1,130
New Brunswick.....	636	674	708	777	857
Quebec.....	7,272	7,803	8,254	8,980	9,926
Ontario.....	11,490	12,252	13,099	14,057	15,450
Manitoba.....	1,395	1,578	1,599	1,725	1,846
Saskatchewan.....	1,130	1,576	1,742	1,587	1,870
Alberta.....	2,125	2,333	2,455	2,571	2,867
British Columbia.....	2,953	3,139	3,366	3,628	4,080
Yukon and Northwest Territories.....	49	50	53	57	60
Foreign countries <sup>1</sup> .....	61	73	75	75	84

<sup>1</sup> Income of Canadians temporarily abroad including pay and allowances of Canadian Armed Forces abroad.

## 7.—Disposition of Personal Income, 1961-65

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1125, and for later years in succeeding editions.

(Millions of dollars)

Item	1961	1962 <sup>*</sup>	1963 <sup>*</sup>	1964 <sup>*</sup>	1965
<b>Personal Direct Taxes—</b>					
Income taxes.....	2,125	2,316	2,487	2,957	3,355
Succession duties and estate taxes.....	146	165	171	179	209
Miscellaneous taxes.....	240	248	258	292	343
Personal expenditure on consumer goods and services.....	24,466	25,926	27,487	29,666	32,063
Personal net saving.....	1,545	2,317	2,531	2,059	2,927
<b>Totals, Personal Income.....</b>	<b>28,522</b>	<b>30,972</b>	<b>32,934</b>	<b>35,153</b>	<b>38,902</b>

## 8.—Personal Expenditure on Consumer Goods and Services, 1961-65

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1126, and for later years in succeeding editions.

(Millions of dollars)

Item	1961	1962 <sup>*</sup>	1963 <sup>*</sup>	1964 <sup>*</sup>	1965
<b>Food.....</b>	<b>5,829</b>	<b>6,123</b>	<b>6,414</b>	<b>6,724</b>	<b>7,114</b>
Tobacco and alcoholic beverages.....	1,683	1,782	1,840	1,911	2,079
Clothing and personal furnishings.....	2,432	2,526	2,643	2,803	2,972
Shelter.....	3,812	3,996	4,323	4,595	4,907
Household operation.....	3,032	3,202	3,352	3,576	3,836
Transportation.....	2,872	3,160	3,430	3,730	4,120
Personal and medical care and death expenses.....	2,045	2,204	2,396	2,613	2,841
Miscellaneous.....	2,761	2,933	3,089	3,714	4,194
<b>Totals.....</b>	<b>24,466</b>	<b>25,926</b>	<b>27,487</b>	<b>29,666</b>	<b>32,063</b>
Durable goods.....	2,716	2,960	3,246	3,592	4,001
Non-durable goods.....	12,178	12,965	13,518	14,389	15,434
Services.....	9,572	10,001	10,723	11,685	12,628

**9.—Federal, Provincial and Municipal Government Revenue and Expenditure, 1961-65**

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1126, and for later years in succeeding editions.

(Millions of dollars)

Item	1961*	1962*	1963*	1964*	1965
<b>Revenue</b>					
Direct Taxes: Persons—					
Income taxes.....	2,125	2,316	2,487	2,957	3,355
Succession duties and estate taxes.....	146	165	171	179	209
Miscellaneous taxes.....	240	248	258	292	348
Direct taxes: corporations.....	1,612	1,710	1,827	1,996	2,164
Withholding taxes.....	116	125	127	140	168
Indirect taxes.....	4,947	5,585	5,911	6,695	7,482
Investment Income—					
Interest.....	483	536	605	648	728
Profits of government business enterprises.....	643	715	790	878	960
Employer and employee contributions to social insurance and government pension funds.....	787	812	852	912	959
<b>Totals, Revenue.....</b>	<b>11,099</b>	<b>12,212</b>	<b>13,028</b>	<b>14,697</b>	<b>16,373</b>
<b>Expenditure</b>					
Purchases of goods and services.....	7,236	7,717	8,075	8,654	9,596
Transfer Payments—					
Interest.....	1,170	1,305	1,423	1,526	1,635
Other.....	3,441	3,725	3,848	4,133	4,502
Capital assistance.....	6	27	61	82	84
Subsidies.....	251	292	311	323	310
Surplus or deficit (on transactions relating to the national accounts).....	-1,005	-854	-690	-21	246
<b>Totals, Expenditure.....</b>	<b>11,099</b>	<b>12,212</b>	<b>13,028</b>	<b>14,697</b>	<b>16,373</b>

**10.—Analysis of Corporation Profits, 1961-65**

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1127, and for later years in succeeding editions.

(Millions of dollars)

Item	1961	1962*	1963*	1964*	1965
Corporation profits before taxes.....	2,841	3,235	3,574	4,106	4,448
Dividends paid to non-residents.....	586	584	614	713	751
Corporation profits including dividends paid to non-residents	3,427	3,819	4,188	4,819	5,199
Deduct: Corporation income tax liabilities.....	-1,612	-1,710	-1,827	-1,996	-2,164
Excess of tax liabilities over collections.....	61	57	59	101	103
Tax collections.....	1,551	1,653	1,775	2,097	2,267
Corporation profits after taxes.....	1,815	2,109	2,361	2,823	3,035
Deduct: Dividends paid to non-residents.....	-586	-584	-614	-713	-751
Corporation profits retained in Canada.....	1,229	1,525	1,747	2,110	2,284
Deduct: Dividends paid to Canadian persons.....	-432	-544	-637	-677	-796
Deduct: Charitable contributions from corporations.....	-40	-44	-44	-44	-44
<b>Undistributed Corporation Profits.....</b>	<b>757</b>	<b>937</b>	<b>1,066</b>	<b>1,389</b>	<b>1,444</b>



### 11.—Corporation Profits before Taxes (including Dividends Paid to Non-residents), by Industry, 1961-65

NOTE.—Comparable figures for the years 1954 and 1955 are given in the 1957-58 Year Book, p. 1127, and for later years in succeeding editions.

(Millions of dollars)

Industry	1961	1962*	1963*	1964*	1965
Agriculture.....	15	13	18	19	18
Forestry.....					
Fishing and trapping.....					
Mining, quarrying and oil wells.....	361	406	458	604	602
Manufacturing.....	1,555	1,816	2,045	2,223	2,371
Construction.....	94	63	55	60	78
Transportation.....	126	125	205	284	306
Storage.....	12	12	15	16	16
Communication.....	137	157	164	190	214
Electric power, gas and water utilities.....	87	96	75	74	92
Wholesale trade.....	222	262	292	345	378
Retail trade.....	213	233	257	272	312
Finance, insurance and real estate.....	530	543	499	607	660
Service.....	75	93	105	125	152
<b>Totals.....</b>	<b>3,427</b>	<b>3,819</b>	<b>4,188</b>	<b>4,819</b>	<b>5,199</b>

## Section 2.—Industry Production Trends

### Indexes of Real Domestic Product

The Dominion Bureau of Statistics in 1963 made available a new set of production data pertaining to the entire spectrum of Canadian industries. These data, in the form of volume of production indexes, are measures of value added for each industry expressed in the dollars of a base year. Technically, they are termed "indexes of real domestic product (GDP) at factor cost originating by industry".\* The value added, or GDP, volume indexes can be regarded as an extension of the index of industrial production† to encompass the remainder of the economy. Concepts and basic methods used to construct both indexes are the same. Thus, industry production index coverage is extended from mining, manufacturing and electric power and gas utilities, for which volume indexes have been published since the 1920s, to include all other major industrial divisions—agriculture, forestry, fishing and trapping, construction, retail and wholesale trade, finance, insurance and real estate, transportation, storage and communication, public administration and defence, and community, recreation, business and personal service. However, only the index of industrial production is published on a monthly basis; for the remaining industries only quarterly and annual indexes are currently being published. The GDP indexes can also be regarded as an extension of the national accounting framework, i.e., as an elaboration of the supply side of the national income accounts.\*

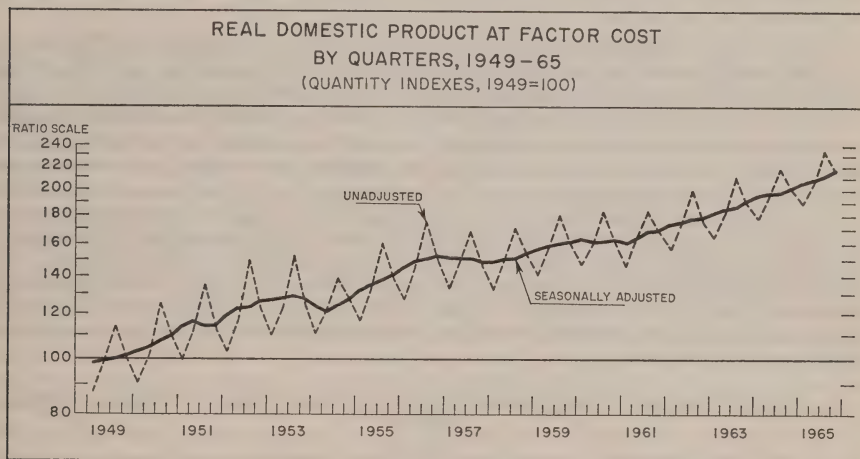
In measuring the output of a single product such as steel, it is normal to think in terms of tons of steel when the question of quantity arises. When measuring the combined production of steel and natural gas, there is an obvious need for a common denominator and it is appropriate to use the average unit prices of a certain time period (chosen as the base) to value the quantities produced before adding them together. The resultant quantity, volume or real output measure can be subsequently left in its constant or base

\* *Indexes of Real Domestic Product by Industry of Origin, 1935-61* (Catalogue No. 61-505). This paper provides a detailed explanation of concepts, uses and limitations, data sources, methodology, etc., and covers a much wider range of industries than provided in this Section. Current quarterly data are published in *DBS monthly Index of Industrial Production* (Catalogue No. 61-005).

† See *Revised Index of Industrial Production, 1935-57* (Catalogue No. 61-502) and the current monthly publication *Index of Industrial Production* (Catalogue No. 61-005), together with its 1966 Annual Supplement which contains historical revisions to the index of industrial production and its components for the 1949-65 period.

period dollar form or it can be expressed in index number form. The latter is accomplished by dividing the constant dollar aggregate of the current period by the dollar aggregate for the base period and multiplying by 100. In constructing a quantity index for a combination of industries where the output of one industry becomes the input of another, the portion double-counted must be eliminated. This is accomplished by revaluing both intermediate input (materials, fuel, etc.) and total output in terms of the dollars of a common base year and subtracting the constant dollar value of the former from the latter to yield a constant dollar value added aggregate.\* This aggregate is the quantity or volume measure represented by the indexes presented herein.

The annual indexes are well suited for studies of production trends, growth rates and inter-industry comparisons, but the quarterly indexes provide a much better tool for the study of the cyclical behaviour of industries, short-term changes in production and, in fact, for most types of current analysis. Statistics computed for less than annual intervals, however, are frequently subject to strong seasonal influences, and variations in the number of working days during a quarter may cause differences in the levels of output between two quarters which otherwise would not exist. Accordingly, the quarterly real output indexes have been adjusted for both seasonal and calendar variation. The effects of the seasonal adjustment are shown on the quarterly chart for the period 1949-65.



**Factors Underlying Industrial Output Trends, 1946-65.**—The early postwar period was marked by several major expansions. The first was based on satisfying the backlog of war-deferred investment and consumer demand and on supplying the needs of the war-devastated countries, especially for various materials. This was followed by some slowing down in production but the requirements of defence-supporting industries after the outbreak of the Korean hostilities and stockpiling requirements at home and abroad introduced a second expansionary period. The third was the investment boom of the mid-1950s during which output reached a new high level. These strong demand influences combined to make most of this period one of fairly rapid and sustained growth. During the late 1950s the rate of increase diminished, as external sources of supply for many commodities multiplied and as competition intensified. At the same time, there was an absence of strong stimulants to domestic demand, such as the deferred demand and the population growth of the preceding period. During the 1960s, however, the first waves of the postwar generation exercised a growing influence on the demand for goods and services

\* See footnote \* on previous page.

and this proved to be one of the major stimuli to the current expansion which began early in 1961 and continued into 1966. Other notable features of the expansion were: the relatively slow growth of imports compared with previous expansion periods, particularly after the stabilization of the Canadian dollar and other government measures undertaken in mid-1962 (although some acceleration took place in imports of machinery and equipment during 1964 and 1965 in response to the increased investment in construction and plant and equipment); the increase in exports, particularly during the latter part of 1963 and early 1964 when large amounts of wheat were sold abroad; the above-average output of the mining and agriculture industries since 1962; the substantial gains in the production of the iron and steel and motor vehicle and parts industries throughout most of the period; and the increased investment activity in both non-residential and residential construction and in machinery and equipment during 1964 and 1965.

Along with the increases in total final demand, there were shifts in the composition of demand, which affected the output of the various industries. Imports retained roughly the same relative share of the gross national product but the share of exports declined from 27.1 p.c. in 1946 to 21.5 p.c. in 1965, an indication of the growing importance of the domestic market as an outlet for the products of Canadian industry. Government expenditure and business gross fixed capital formation made considerable relative gains but personal expenditure on goods and services as a percentage of total expenditure declined from 67.8 p.c. in 1946 to 61.6 p.c. in 1965.

Even more remarkable than some of the demand-induced changes were the striking changes brought about by the technological discoveries and innovations that transformed whole production processes and opened up previously unknown areas in the fields of manufacturing, transportation and communication. Newer industries, such as air transport, assumed major importance in a comparatively short time; entirely new industries, such as gas pipelines, appeared; and a profusion of new products were created, such as the petrochemicals of the chemicals industry and the television and other electronic products of the telecommunication equipment industry. As was to be expected, the industries in a position to benefit from such innovations were among the most rapidly expanding in the economy, although the impact of the expansion spread through the entire economic system. The changes in production and demand also influenced the level of employment in the various industries; there was a considerable shift in employment during the postwar period from the goods-producing to the service-producing industries and most of the loss in the former took place in agriculture.

## 12.—Quantity Indexes of Real Domestic Product at Factor Cost, by Industry of Origin, 1950-65

(1949=100)

Industry	1950	1951	1952	1953	1954	1955	1956	1957
Agriculture.....	106.2	120.9	148.8	136.3	104.3	132.1	141.7	117.5
Forestry.....	118.9	141.5	129.7	123.7	128.4	135.7	143.4	130.5
Fishing and trapping.....	108.8	111.4	101.6	103.5	112.3	105.6	111.6	105.5
Mining.....	109.3	123.5	131.6	143.3	158.9	187.8	218.3	239.3
Manufacturing.....	106.7	115.9	120.2	128.9	126.0	138.3	151.2	150.9
Construction.....	106.7	110.6	123.2	130.1	129.8	139.8	165.7	174.7
Electric power and gas utilities.....	113.2	129.4	140.7	147.8	161.6	183.0	204.4	219.9
Transportation, storage, communication.....	103.3	113.1	119.4	121.0	117.9	133.6	149.2	149.6
Trade.....	106.9	108.1	114.6	121.3	120.6	132.0	144.2	144.6
Finance, insurance and real estate.....	105.6	113.4	118.4	123.2	129.9	136.6	141.5	150.9
Public administration and defence.....	106.6	119.0	136.2	144.2	151.3	156.3	158.8	163.7
Community, recreation, business and personal service.....	103.2	107.9	112.1	115.7	117.4	119.9	127.0	130.6
<b>Real Domestic Product.....</b>	<b>106.5</b>	<b>114.8</b>	<b>123.2</b>	<b>127.4</b>	<b>124.7</b>	<b>137.4</b>	<b>149.6</b>	<b>149.6</b>



**12.—Quantity Indexes of Real Domestic Product at Factor Cost, by Industry of Origin,  
1950-65—concluded**

Industry	1958	1959	1960	1961	1962	1963	1964	1965
Agriculture.....	125.1	125.1	127.9	116.0	134.7	147.5	140.2	149.9
Forestry.....	115.6	130.6	141.8	130.8	140.5	149.4	159.3	160.4
Fishing and trapping.....	117.8	105.8	104.0	115.7	130.4	125.2	123.6	120.4
Mining.....	243.3	275.4	275.6	283.0	304.7	318.3	346.4	365.6
Manufacturing.....	148.0	159.0	161.2	166.9	181.2	193.9	211.9	230.1
Construction.....	178.4	170.7	163.0	168.4	170.9	173.6	190.4	211.2
Electric power and gas utilities.....	241.3	273.9	298.5	316.3	338.0	367.5	405.7	448.3
Transportation, storage and communication.....	146.7	160.5	163.9	172.0	179.2	192.0	209.3	224.8
Trade.....	147.4	156.4	156.6	158.2	166.8	173.2	183.8	197.6
Finance, insurance and real estate.....	156.1	163.5	169.5	175.5	182.9	194.5	203.0	211.9
Public administration and defence.....	171.3	175.0	177.8	183.9	187.9	188.1	189.8	190.7
Community, recreation, business and personal service.....	135.1	141.3	147.4	152.2	158.2	165.0	171.0	178.8
<b>Real Domestic Product.....</b>	<b>151.5</b>	<b>159.8</b>	<b>162.5</b>	<b>165.7</b>	<b>176.5</b>	<b>186.4</b>	<b>197.9</b>	<b>211.6</b>

**Industrial Expansion, 1946-65.**—Although all the major industry groups expanded during 1946-65, development was not uniform throughout the period. Three important types of factors affecting the expansionary paths of industries were in evidence at some point during the period. The first may be described as some special factor at work in a particular industry, the effects of which would be most noticeable in that industry—for example, the demand for uranium which had an important influence on the mining industry during the latter half of the 1950s, the opening up of new mineral resources such as the iron ore mines in Quebec-Labrador, and certain technological innovations such as the development of synthetic materials or television. The second type of factor is much more general in its effects and in its causes. Such factors as increased demand for consumer goods resulting from a rising standard of living and a growing population, shifts in world trading patterns or shortages causing increased demand for export goods, the surge of investment activity associated with replacement cycles, as well as attempts to broaden the base of economic activity through investment in research, social overhead capital, education, improved management and marketing techniques, or a more efficient production process (or a confluence of all these factors) appear to lie at the root of such postwar expansions as the investment boom of the mid-1950s or the rapid expansion in production since 1961. The third type of factor would be some unique and far-reaching event, of which the Korean War might serve as a conspicuous example.

All three factors, jointly or in turn, have reacted on the various industries resulting in the upswings in aggregate production. The percentage growth of each of the main industrial groups in the 1946-65 period was as follows:—

<i>Industry</i>	<i>p.c.</i>	<i>Industry</i>	<i>p.c.</i>
Agriculture.....	1.5	Trade.....	4.1
Forestry.....	1.7	Finance, insurance and real estate.....	5.0
Fishing and trapping.....	1.8	Public administration and defence.....	4.0
Mining.....	9.1	Community, recreation, business and personal service....	3.6
Manufacturing.....	4.8		
Construction.....	5.1	<b>REAL DOMESTIC PRODUCT.....</b>	<b>4.4</b>
Electric power and gas utilities.....	9.6		
Transportation, storage and communication.....	4.6		

Foremost in growth was the electric power and gas utilities industry, followed by the mining and construction industries. All three were strongly affected by technological advances, new discoveries and a fairly well sustained demand for their products. The demand in mining frequently came from abroad, resulting in relatively high export sales and providing incentive for the opening up and developing of new mineral resource areas. Some slackening in construction activity was evident following the unusually high levels reached during the mid-1950s but since 1963 the swing has again been upward.

Although most of the other industry divisions (except agriculture, forestry and fishing and trapping) expanded at roughly the same average rate of between about 4 p.c. and 5 p.c., the manufacturing, trade, and transportation, storage and communication industry divisions, which together account for about one half of the total output, also showed strikingly similar cyclical patterns. Within manufacturing it was the durables component that expanded particularly rapidly during the cyclical upturns and that benefited from the need for machinery and equipment in the periods of heavy investment and from increased consumer demand for such products as motor vehicles and electrical appliances during the current expansion. Non-durables maintained a fairly steady rate of expansion for most of the postwar period, largely in response to increased population and demand for industrial materials. A similar pattern was observable in trade, with retail trade exhibiting a relatively smooth expansionary trend.

The community, recreation, business and personal service industry division was relatively insensitive both to cyclical and irregular influences but, along with some other steadily expanding industries such as finance, insurance and real estate, non-durables and retail trade, it helped to sustain aggregate production and growth during periods of contraction and expansion. Although this division as a whole showed a less-than-average rate of growth, some of its components, such as business services, education and hospitals and restaurants, hotels and motels, were among the most rapidly and steadily expanding in the economy.

The rates of growth in the forestry, agriculture, and fishing and trapping divisions were also below average and were subject to pronounced irregular fluctuations in output—forestry because of the nature of its production processes and also, to some extent, because of its sensitivity to changes in world demand and price; agriculture because of marked year-to-year differences in output more often caused by weather conditions and similar factors than by changes in prices and demand conditions; and fisheries because of its dependence on the vagaries of nature.

### Production of Commodity-Producing Industries

The data contained in the tables under this heading are published in the DBS report *Survey of Production*.<sup>\*</sup> The scope of the survey of production is limited to industries chiefly engaged in the production of commodities and it measures production in current dollars. This is in contrast to the real domestic product series (pp. 1080-1084) which encompasses all industries and measures production in terms of the dollars of a base year.

Tables 13 and 14 give "census value added" production data, classified by province and industry, respectively. Census value added is derived by deducting the cost of materials, fuel, electricity and process supplies consumed in the production process from the gross value of output (shipments or sales adjusted for inventories). The figures include interim classification and valuation changes in mining and manufacturing brought about by the adoption of the 1960 standard industrial classification of establishments. However, the two industry aggregates continue to consist of census value added accruing from their primary activity only.<sup>\*</sup> Standard industrial classification changes have not yet been implemented for other industries.

<sup>\*</sup> DBS Catalogue No. 61-202. See Appendix II of the 1963 issue for census value added in manufacturing (all activities) 1961, 1962 and 1963.

## 13.—Census Value Added for Commodity-Producing Industries, by Province, 1961-63

Province or Territory	1961		1962		1963	
	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.
Newfoundland <sup>1</sup> .....	261,003	1.4	290,161	1.4	307,619	1.3
Prince Edward Island.....	45,367	0.2	50,564	0.2	52,855	0.2
Nova Scotia.....	408,798	2.1	422,516	2.0	445,712	1.9
New Brunswick.....	329,480	1.7	329,107	1.5	354,632	1.6
Quebec.....	5,043,234	26.1	5,415,924	25.3	5,588,386	24.4
Ontario.....	8,073,123	41.8	8,655,160	40.6	9,314,608	40.7
Manitoba.....	693,411	3.6	895,312	4.2	909,463	4.0
Saskatchewan.....	765,917	4.0	1,252,440	5.8	1,557,995	6.8
Alberta.....	1,738,585	9.0	1,903,899	9.0	2,047,788	9.0
British Columbia <sup>2</sup> .....	1,907,739	9.9	2,127,590	9.9	2,262,789	10.0
Yukon and Northwest Territories <sup>2</sup> .....	30,479	0.2	29,464	0.1	30,000	0.1
<b>Canada.....</b>	<b>19,297,126</b>	<b>100.0</b>	<b>21,402,138</b>	<b>100.0</b>	<b>23,871,847</b>	<b>100.0</b>

<sup>1</sup> Excludes agriculture.  
British Columbia.<sup>2</sup> Construction figures for the Yukon and Northwest Territories are included with

## 14.—Census Value Added for Commodity-Producing Industries, by Province and Industry, 1963

Industry	Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick	
	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.
Agriculture.....	..	..	13,665	25.8	24,877	5.6	23,355	6.6
Forestry.....	19,654	6.4	492	0.9	12,610	2.8	33,307	10.8
Fisheries.....	20,429	6.6	4,630	8.8	36,644	8.2	9,353	2.6
Trapping.....	59	--	1	--	100	--	221	0.1
Mining.....	79,600	25.9	296	0.6	45,808	10.3	11,666	3.3
Electric power.....	15,441	5.0	2,696	5.1	28,515	6.4	24,473	6.9
Manufactures.....	74,001	24.1	10,621	20.1	188,064	42.2	169,640	47.8
Construction.....	98,435	32.0	20,454	38.7	109,095	24.5	77,617	21.9
<b>Totals.....</b>	<b>307,619<sup>1</sup></b>	<b>100.0<sup>1</sup></b>	<b>52,855</b>	<b>100.0</b>	<b>445,712</b>	<b>100.0</b>	<b>354,632</b>	<b>100.0</b>
	Quebec		Ontario		Manitoba		Saskatchewan	
	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.
Agriculture.....	275,509	4.9	599,991	6.4	199,209	21.9	915,699	58.8
Forestry.....	169,100	3.0	118,160	1.3	5,395	0.6	2,992	0.2
Fisheries.....	6,223	0.1	5,504	0.1	4,356	0.5	1,300	0.1
Trapping.....	1,503	--	3,442	--	1,627	0.2	1,416	0.1
Mining.....	326,159	5.9	363,843	3.9	36,678	4.0	224,332	14.4
Electric power.....	262,733	4.7	326,498	3.5	44,109	4.8	43,023	2.7
Manufactures.....	3,589,618	64.3	6,539,556	70.2	402,250	44.2	137,849	8.8
Construction.....	957,541	17.1	1,357,614	14.6	215,840	23.8	231,384	14.9
<b>Totals.....</b>	<b>5,588,386</b>	<b>100.0</b>	<b>9,314,608</b>	<b>100.0</b>	<b>909,463</b>	<b>100.0</b>	<b>1,557,995</b>	<b>100.0</b>
	Alberta		British Columbia		Yukon and Northwest Territories		Canada	
	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.
Agriculture.....	507,790	24.8	104,897	4.6	..	..	2,664,992	11.6
Forestry.....	19,440	1.0	362,384	16.0	562	1.9	749,096	3.3
Fisheries.....	676	--	40,466	1.8	796	2.6	130,376	0.6
Trapping.....	1,949	0.1	922	--	934	3.1	12,174	0.1
Mining.....	593,735	29.0	150,769	6.7	22,968	76.6	1,855,853	8.1
Electric power.....	59,547	2.9	101,376	4.5	3,260	10.9	911,671	4.0
Manufactures.....	394,317	19.2	1,060,772	46.9	1,480	4.9	12,568,168	54.9
Construction.....	470,334	23.0	441,203 <sup>2</sup>	19.5	3	3	3,979,517	17.4
<b>Totals.....</b>	<b>2,047,788</b>	<b>100.0</b>	<b>2,262,789</b>	<b>100.0</b>	<b>30,000</b>	<b>100.0</b>	<b>22,871,847</b>	<b>100.0</b>

<sup>1</sup> Excludes agriculture.  
Columbia.<sup>2</sup> Includes the Yukon and Northwest Territories.<sup>3</sup> Included with British



### Section 3.—Aggregate Productivity Trends

Increasing interest in questions of economic growth, cost-structure and international competitiveness, and in the relationships between output, employment, earnings and prices has focused attention on productivity as a framework within which such problems can usefully be discussed. Recognizing this interest, the Dominion Bureau of Statistics has made available annual indexes of output per person employed and per man-hour in Canada covering the commercial industries as a whole, with separate detail for agriculture and the commercial non-agricultural industries, manufacturing and the residual commercial non-manufacturing industries of this universe.\*

Although these measures relate output to a single input only, namely labour time, they do not measure the exclusive contribution of labour to output. Changes in indexes of output per unit of labour input reflect the combined influence of a number of separate though interrelated factors such as the amount and quality of capital equipment, the extent of utilization of available capacity, managerial efficiency and the impact of technological progress, as well as the skill and effort of the work force.

**Sources of Data.**—The output components of the various indexes of output per unit of labour input referred to here are the historical indexes of "real domestic product (GDP) at factor cost by industry of origin", described in Section 2, p. 1080. These indexes, which were developed within the conceptual framework of the national accounts and which measure in constant dollar terms the unduplicated contribution of each component industry to total output, are considered basically suitable for productivity measurement when matched with the corresponding input measures.

The major sources for the employment and man-hour indexes were the monthly labour force and employment surveys, and these were supplemented by data from such sources as the annual censuses of manufacturing and mining and the decennial census of population. Since the data from these diverse sources varied considerably in their coverage, concepts and methods of compilation, care had to be exercised in their selection, adaptation and combination into aggregate measures of labour input which would be conceptually and statistically consistent, both internally and in relation to the output data. Labour force survey data were used for the paid worker estimates of agriculture and of fishing and trapping, while those for manufacturing and mining were based on adjusted annual census data. Estimates for most of the remaining industry divisions were derived from adjusted employment survey data. Estimates of other than paid workers (own-account workers, employers and unpaid family workers) were derived mainly from the labour force survey. The estimates of average hours worked, which were needed for the indexes of output per man-hour, were also based on labour force survey data, except in the case of manufacturing, where estimates of man-hours paid from the census of manufactures were adjusted to the man-hours worked concept.

**Growth Rates.**—Output per person employed in the commercial non-agricultural industries, to which the initial coverage of the indexes was confined, grew at an average annual rate of 2.5 p.c. between 1946 and 1965. Because of the decline in average hours worked per person, this was a lower rate of growth than that of output per man-hour which, during the same period, increased by 3.2 p.c. per annum. Corresponding figures for manufacturing were 3.4 p.c. and 3.8 p.c. and those for the residual non-manufacturing industries of the commercial non-agricultural sector were 2.1 p.c. and 2.9 p.c., respectively.

In agriculture, the average annual rates of growth of output per person employed and per man-hour between 1946 and 1965 were 5.3 p.c. and 5.5 p.c., respectively. However, in view of the difficulties of measuring the number and especially the man-hours of persons employed in agriculture, data presented for this industry division should be regarded as

\* See DBS Reference Paper *Indexes of Output per Person Employed and per Man-Hour in Canada, Commercial Non-agricultural Industries, 1947-65* (Catalogue No. 14-501) and the first subsequent annual publication *Indexes of Output per Person Employed and per Man-Hour in Canada, Commercial Industries, 1946-66* (Catalogue No. 14-201).

approximate. In the commercial industries as a whole, output per person employed increased between 1946 and 1965 at an average annual rate of 3.3 p.c., while output per man-hour grew by 4.1 p.c. per annum.

**Inter-industry Shift Effects.**—In addition to measuring the changes in productivity within the component industries, the aggregate productivity indexes measure the effect of shifts in employment and production between industries having different levels of productivity. One of the most significant such shifts within the commercial industries of Canada during the postwar years was from agriculture to the non-agricultural industries, where a higher level of output per unit of labour input prevails. The effect of this shift can be measured in various ways and a number of alternative calculations have been carried out for the most recent annual publication,\* all of which confirm, to a greater or lesser extent, that the decline in the relative importance of agriculture made a positive contribution to the total increase in output per person employed in the commercial industries between 1946 and 1965.

\* DBS Catalogue No. 14-201.

### 15.—Indexes of Output per Person Employed and per Man-Hour, 1946-65

(1949=100)

Year	Output	Persons Employed	Man-Hours	Output per Person Employed	Output per Man-Hour
COMMERCIAL INDUSTRIES					
1946.....	88.1	92.4	95.3	95.3	92.4
1947.....	94.0	96.8	97.4	97.1	96.5
1948.....	97.4	98.6	99.2	98.8	98.2
1949.....	100.0	100.0	100.0	100.0	100.0
1950.....	106.7	100.0	97.7	106.6	109.2
1951.....	114.9	102.5	99.5	112.1	115.5
1952.....	123.0	103.5	99.7	118.8	123.3
1953.....	127.0	104.0	100.0	122.1	127.0
1954.....	123.4	103.3	98.9	119.5	124.8
1955.....	136.8	104.7	99.5	130.7	137.6
1956.....	149.8	108.9	103.5	137.5	144.7
1957.....	149.3	110.8	103.4	134.7	144.5
1958.....	150.8	107.7	99.3	140.0	151.8
1959.....	159.3	109.5	101.0	145.5	157.8
1960.....	161.7	109.0	99.8	148.3	162.0
1961.....	164.4	109.4	98.6	150.3	166.8
1962.....	175.6	111.7	100.8	157.2	174.1
1963.....	186.1	113.8	101.9	163.5	182.5
1964.....	198.2	117.9	105.3	168.1	188.3
1965.....	212.7	122.2	107.6	174.1	197.7
1965 as percentage of 1946.....	241.5	132.2	112.9	182.7	213.9
Annual trend rate of change <sup>1</sup> .....	+4.4	+1.1	+0.3	+3.3	+4.1
AGRICULTURE					
1946.....	109.4	109.4	112.1	100.0	97.6
1947.....	102.8	103.5	102.4	99.3	100.4
1948.....	106.1	101.1	100.8	104.9	105.3
1949.....	100.0	100.0	100.0	100.0	100.0
1950.....	106.2	93.9	91.8	113.1	115.7
1951.....	120.9	86.6	86.2	139.6	140.3
1952.....	148.8	82.2	82.6	181.0	180.2
1953.....	136.3	79.2	81.1	172.2	168.0
1954.....	104.3	81.0	83.9	128.8	124.4
1955.....	132.1	75.6	78.4	174.9	168.5
1956.....	141.7	71.6	74.8	198.0	189.4
1957.....	117.5	68.6	70.9	171.2	165.7
1958.....	125.1	65.7	66.7	190.5	187.5
1959.....	125.1	63.8	64.7	196.0	193.4
1960.....	127.9	62.3	62.9	205.5	203.5
1961.....	116.0	62.2	61.6	186.5	188.3
1962.....	134.7	60.2	59.3	223.6	227.2
1963.....	147.5	59.1	57.4	249.5	256.9
1964.....	140.2	57.6	55.1	243.6	254.7
1965.....	149.9	54.2	51.4	276.4	292.0
1965 as percentage of 1946.....	137.1	49.6	45.8	276.5	299.1
Annual trend rate of change <sup>1</sup> .....	+1.5	-3.6	-3.8	+5.3	+5.5

<sup>1</sup> Calculated by fitting a straight line to the logarithms of the data using the least squares method.

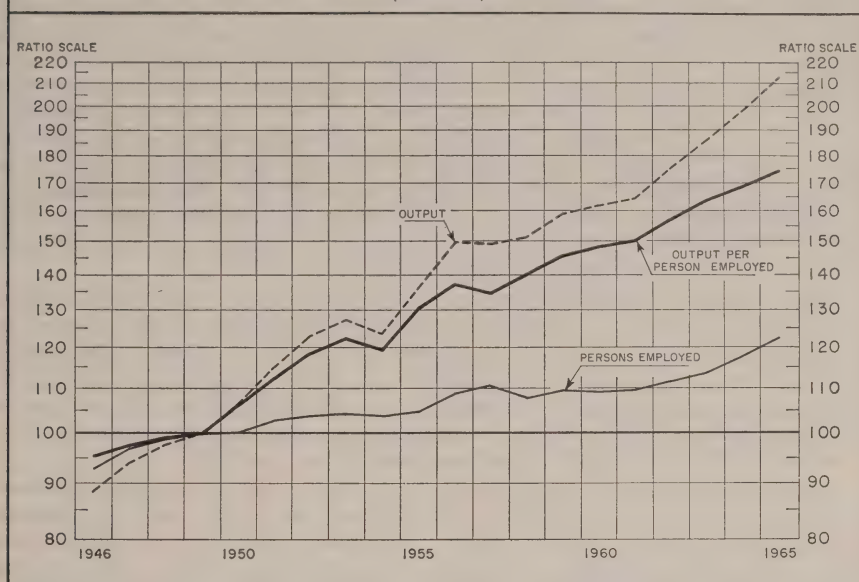
## 15.—Indexes of Output per Person Employed and per Man-Hour, 1946-65—concluded

Year	Output	Persons Employed	Man-Hours	Output per Person Employed	Output per Man-Hour
COMMERCIAL NON-AGRICULTURAL INDUSTRIES					
1946.....	85.3	86.9	88.6	98.1	96.2
1947.....	92.8	94.6	95.3	98.1	97.3
1948.....	96.3	97.8	98.6	98.5	97.7
1949.....	100.0	100.0	100.0	100.0	100.0
1950.....	106.7	102.0	100.1	104.6	106.7
1951.....	114.1	107.7	104.8	106.0	108.9
1952.....	119.5	110.4	106.6	108.3	112.2
1953.....	125.8	112.1	107.5	112.2	116.9
1954.....	126.0	110.6	104.9	113.9	120.1
1955.....	137.5	114.1	107.9	120.5	127.4
1956.....	150.9	121.0	115.0	124.7	131.2
1957.....	153.5	124.5	116.4	123.3	131.9
1958.....	154.2	121.3	112.3	127.1	137.2
1959.....	163.9	124.3	115.5	131.8	141.9
1960.....	166.1	124.2	114.6	133.8	145.0
1961.....	170.8	124.7	113.4	137.0	150.7
1962.....	181.0	128.4	117.4	141.0	154.1
1963.....	191.2	131.5	119.8	145.4	159.6
1964.....	205.8	137.4	125.4	149.8	164.2
1965.....	221.0	144.2	130.1	153.3	169.8
1965 as percentage of 1946.....	259.3	165.9	146.9	156.3	176.5
Annual trend rate of change <sup>1</sup> .....	+4.8	+2.2	+1.5	+2.5	+3.2
MANUFACTURING					
1946.....	85.2	90.0	92.3	94.7	92.3
1947.....	93.2	96.3	97.7	96.9	95.5
1948.....	97.3	98.5	100.4	98.7	96.9
1949.....	100.0	100.0	100.0	100.0	100.0
1950.....	106.7	101.7	100.8	104.9	105.9
1951.....	115.9	107.9	104.9	107.4	110.5
1952.....	120.2	110.8	106.6	108.4	112.7
1953.....	128.9	114.2	110.5	112.9	116.6
1954.....	126.0	109.3	103.9	115.2	121.3
1955.....	138.3	112.1	107.0	123.3	129.2
1956.....	151.2	116.8	112.3	129.5	134.7
1957.....	150.9	117.3	111.3	128.6	135.5
1958.....	148.0	111.5	105.8	132.8	139.9
1959.....	159.0	112.8	107.8	140.9	147.5
1960.....	161.2	111.4	105.6	144.7	152.7
1961.....	166.9	110.9	104.6	150.5	159.5
1962.....	181.2	115.4	109.3	157.0	165.8
1963.....	193.9	119.0	112.7	163.0	172.1
1964.....	211.9	124.7	118.6	169.9	178.6
1965.....	230.1	130.2	123.3	176.7	186.7
1965 as percentage of 1946.....	270.1	144.7	133.6	186.6	202.2
Annual trend rate of change <sup>1</sup> .....	+4.8	+1.3	+0.9	+3.4	+3.8
NON-MANUFACTURING INDUSTRIES (COMMERCIAL NON-AGRICULTURAL)					
1946.....	85.3	85.3	86.9	100.0	98.2
1947.....	92.6	93.7	94.3	98.8	98.2
1948.....	95.8	97.4	97.7	98.4	98.0
1949.....	100.0	100.0	100.0	100.0	100.0
1950.....	106.7	102.2	99.7	104.5	107.0
1951.....	113.2	107.5	104.7	105.3	108.1
1952.....	119.2	110.2	106.5	108.2	111.9
1953.....	124.2	111.0	106.2	111.9	117.0
1954.....	126.0	111.2	105.4	113.2	119.5
1955.....	137.1	115.2	108.3	119.0	126.5
1956.....	150.7	123.3	116.3	122.2	129.6
1957.....	154.9	128.4	118.7	120.6	130.5
1958.....	157.3	126.5	115.4	124.4	136.3
1959.....	166.4	130.4	119.0	127.5	139.7
1960.....	168.6	131.0	118.7	128.7	142.1
1961.....	172.8	132.1	117.4	130.8	147.2
1962.....	180.8	135.3	121.2	133.7	149.2
1963.....	189.8	138.2	123.1	137.3	154.2
1964.....	202.7	144.2	128.5	140.6	157.8
1965.....	216.4	151.6	133.3	142.7	162.3
1965 as percentage of 1946.....	253.8	177.8	153.5	142.7	165.4
Annual trend rate of change <sup>1</sup> .....	+4.8	+2.6	+1.8	+2.1	+2.9

<sup>1</sup> Calculated by fitting a straight line to the logarithms of the data using the least squares method.



INDEXES OF OUTPUT PER PERSON EMPLOYED,  
COMMERCIAL INDUSTRIES, 1946-65  
(1949=100)



#### Section 4.—Canadian Balance of International Payments\*

Canada's total commercial and financial transactions with residents of other countries are presented in summary form in statements of the Canadian balance of international payments. The current account shows separately the principal types of transactions in goods and services with non-residents. The capital account provides a distribution of capital movements into direct and portfolio investments and into long-term and short-term forms. The difference between the current account balance and the balance of these capital movements in an accounting period is reflected in the change in the official holdings of gold, foreign exchange, and Canada's net International Monetary Fund position.

During the past decade, a wide degree of imbalance has characterized Canada's international payments. Large current account deficits have customarily been associated with periods of Canadian prosperity. High levels of investment, rising personal consumption and the growth in government expenditures, including defence outlays abroad, have contributed to the deficits. These large current deficits, which reached a peak of \$1,487,000,000 in 1959, have reflected and been financed by substantial inflows of capital. Following this record high level, the imbalances in current transactions narrowed in successive years to \$424,000,000 in 1964 but widened in 1965 to \$1,083,000,000, as a result of a sharp contraction in the merchandise surplus.

\* More detailed information is given in DBS annual report *Canadian Balance of International Payments and International Investment Position* (Catalogue No. 67-201) and in *Quarterly Estimates of the Canadian Balance of International Payments* (Catalogue No. 67-001).

**Current Account Transactions.**—The surplus on merchandise trade,\* which emerged in 1961 for the first time since 1954, expanded sharply in 1963 and in 1964 when it exceeded \$700,000,000; an important element in this rise was the extraordinary sales of wheat and flour to the U.S.S.R. and other Communist countries. Thus, the reduction of Canada's deficit on current transactions in goods and services between 1959 and 1964, followed by an upturn in 1965, was mainly the result of a shift in the balance of commodity trade. This balance varied widely; the record deficit of \$728,000,000 occurred in 1956 when it accounted for more than one half of the total current account deficit and the unusually large surplus of \$701,000,000 for 1964 exceeded the level of the merchandise surpluses of the immediate postwar years. The export balance of \$118,000,000 in 1965 was markedly lower than the surpluses of \$173,000,000 and \$184,000,000 in 1961 and 1962. The non-merchandise deficit rose rapidly from 1955, when it still stood below \$500,000,000, to 1961, when the \$1,000,000,000-level was exceeded. In recent years, the "invisible" deficit has fluctuated within a fairly narrow range and stood at \$1,201,000,000 in 1965.

Since 1954, when merchandise exports and imports were almost equal at \$3,900,000,000, exports have increased fairly steadily to a record of \$8,745,000,000 in 1965. Imports, on the other hand, have shown wider fluctuations in their growth pattern. The value of imports in current dollars rose more than 40 p.c. in two years to \$5,565,000,000 in 1956 and, except for a substantial drop of nearly 8 p.c. to \$5,066,000,000 in 1958, remained at about that level until 1960. Thereafter the value rose at a generally increasing rate of growth to \$8,627,000,000 in 1965, which was about 56 p.c. above 1960.

In the past decade, the relative importance of exports of manufactured goods increased markedly, that of metals and minerals advanced more moderately, and the percentage share for forest products narrowed visibly. The relative position of wheat and wheat flour, which had been diminishing, recovered sharply in 1961 as a result of the large shipments of grain to Mainland China and other Communist countries. The very heavy shipments of wheat on the Russian account, together with sizable exports to Britain, Japan, Mainland China, West Germany and Eastern European countries, boosted the total value of wheat and wheat flour exports in 1964 to about \$1,100,000,000, although the total declined to some \$900,000,000 the following year. During the 1960s, an increasing share of the Canadian national output has moved into foreign markets. Contributing to the gain of some \$500,000,000 in merchandise exports in 1965 were larger shipments of meat, wood pulp, newsprint, non-ferrous metals, crude petroleum and natural gas, chemicals and fertilizers, and manufactured goods. Within the manufactured goods group, exports of motor vehicles and parts doubled from less than \$180,000,000 in 1964 to more than \$350,000,000 in 1965, following the signing at the beginning of the year of the Canadian-United States Automotive Agreement. However, with the removal of tariffs from the two-way trade in new cars and parts, the rise in imports exceeded that in exports and the deficit on trade in automobiles and parts expanded in 1965.

The value of all imports rose sharply in 1965 to the highest recorded level of \$8,627,000,000. Motor vehicles and parts accounted for over \$300,000,000 of the expansion and smaller but still substantial increases took place in imports of industrial materials, machinery, equipment and tools, coal and fuel oil, and consumer goods. Small rises in a variety of food commodities were, however, not enough to counterbalance a decline of nearly \$50,000,000 in raw sugar imports.

The deficit on Canada's non-merchandise transactions with foreign countries, which since 1959 has been on a high plateau exceeding \$1,000,000,000, rose to \$1,201,000,000 in

\* Commodity trade statistics have been adjusted to reflect more closely the timing of transactions, particularly for investment goods, and to exclude commodities which are either covered elsewhere in the accounts or are not pertinent for balance of payments purposes.

1965. This deficit has risen about 150 p.c. in the past decade. A total of \$761,000,000 or more than 60 p.c. of the 1965 deficit was directly related to Canada's indebtedness abroad. Interest and dividend payments by Canadians to non-resident investors reached \$1,071,000,000, transfers in other forms of investment income amounted to well over \$200,000,000, and there were also growing payments abroad for a variety of business services. Furthermore, some hundreds of millions of dollars of earnings, which accrued to foreigners but which were retained in Canada for reinvestment, are excluded from the current account.

The contribution by travel transactions of nearly one fifth of the deficit in 1960 contracted sharply in the following years, in particular after the lowering of the Canadian dollar in May 1962 to a new fixed par value of 92½ cents (U.S.). From a small deficit in 1962, the balance on travel changed to a small surplus in 1963 and then returned to a deficit position of \$50,000,000 and \$32,000,000 in 1964 and 1965, respectively. Net payments of migrants' funds and inheritances, which represented about 6.5 p.c. of the "invisible" deficit in 1961, narrowed gradually to a position of balance in 1965. The deficit on freight and shipping services fluctuated between about 3 p.c. and 8.5 p.c. of the total in the period 1961-65, and the value of gold production available for export served to reduce the non-merchandise deficit by between 11.5 p.c. and 15 p.c. The substantial remaining portion of the deficit, fluctuating between 36 p.c. and 44 p.c., originated from other transactions, including miscellaneous investment income, referred to previously, and official contributions; these stood at a record level of \$92,000,000 in 1965.

The characteristic bilateral distribution of the Canadian current account balances was maintained in 1965; a surplus from transactions with overseas countries partially covered a deficit with the United States. However, a rise of nearly 17 p.c. in this deficit from \$1,635,000,000 in 1964 to \$1,912,000,000, combined with a decline of about 32 p.c. in the surplus with overseas countries from \$1,211,000,000 to \$829,000,000, contributed to the increase in the over-all deficit from \$424,000,000 to \$1,083,000,000. In current dollars, the 1965 deficit with the United States exceeded the previous record level of \$1,650,000,000 reached in 1956; the surplus on current transactions with Britain declined from the recent high level of \$605,000,000 in 1964 to \$510,000,000; and the surplus with other countries was nearly halved from \$606,000,000 in 1964 to \$319,000,000 in 1965.

**Capital Movements.**—In 1965, Canada continued to draw substantially on the resources, both real and financial, of the other countries of the world, as the net capital inflow of \$1,240,000,000 (excluding the change in official monetary assets) moved up again to the \$1,000,000,000-to-\$1,500,000,000 range that prevailed from 1956 to 1962. It was more than 50 p.c. above the net inflow in 1964 and at about the same level as in 1961. Capital movements in long-term forms, covering direct investment, portfolio security transactions, official loans and other long-term investments, amounted to \$713,000,000 in 1965, down 13 p.c. from the total of \$820,000,000 in the previous year. The long-term capital inflow covered only about two thirds of the current account deficit following the years 1963 and 1964 which were the first since 1956 in which the long-term inflows exceeded the deficit on transactions in current goods and services. Capital movements in short-term forms, which were on balance outwards in 1964, were reversed into sizable inflows totalling \$527,000,000. Contributions to the inflows were increases in foreign currency banking loans to Canadian residents together with a reduction of their bank balances and other short-term funds abroad. An offsetting influence was the decline in the inflow attributable to the total transactions in the short-term paper and obligations of Canadian finance companies.

The net inflow in 1965 of \$405,000,000 of capital for direct investment in foreign-controlled enterprises in Canada was up 50 p.c. from the low levels of 1963 and 1964.



In the main, the inflows continued to reflect investment by foreign corporations in their subsidiaries and branches, which contributed to new capital formation in Canada; manufacturing enterprises and petroleum and natural gas received the largest shares. The flow of direct investment abroad of Canadian capital was estimated at \$125,000,000 in 1965, which was higher than in 1964 but slightly lower than in 1963.

Capital inflows arising from transactions in Canadian and foreign securities amounted to \$541,000,000 compared with \$645,000,000 in 1964. New issues of bonds sold to investors in the United States continued to be the most important factor in the inflow. Canada received \$32,000,000 under the arrangements relating to the Columbia River Treaty; the remaining capital movements in long-term forms were dominated by large net outflows arising from loans and advances under official programs to finance Canadian exports. Canada's external monetary assets rose by \$157,000,000 in 1965. The official holdings of gold and foreign exchange declined by \$11,000,000 and Canada's net International Monetary Fund position rose by \$168,000,000.

Direct investment inflows have been a significant ingredient in the capital account in the past decade. Continuing and substantial for nearly the entire period, these receipts contributed in particular to resource development and the growth of associated industries. However, from 1956 to 1959 and again in 1963 to 1965, the inflow for direct investment, substantial though it was, was less than the inflow of portfolio capital, as some of the sharply increased demands for new capital were channelled to foreign capital markets through the sale to non-residents of new issues of Canadian bonds and debentures. Corporations, provincial governments and municipalities were all important borrowers.

#### 16.—Current Account Transactions Between Canada and All Countries, 1946-65

(Millions of dollars)

Year	Current Receipts		Current Payments			Net Balance on Current Account indicating Net Movement of Capital	
	Merchandise	Other	Merchandise	Official Contributions	Other		
1946.....	2,393	972	1,822	97	1,083	+	363
1947.....	2,723	1,025	2,535	38	1,126	+	49
1948.....	3,030	1,117	2,598	23	1,075	+	451
1949.....	2,989	1,100	2,696	6	1,210	+	177
1950.....	3,139	1,148	3,132	5	1,469	—	319
1951.....	3,950	1,342	4,101	9	1,694	—	512
1952.....	4,339	1,534	3,854	16	1,815	+	187
1953.....	4,152	1,587	4,212	25	1,950	—	448
1954.....	3,934	1,598	3,916	11	2,029	—	424
1955.....	4,332	1,749	4,543	24	2,201	—	687
1956.....	4,837	1,795	5,565	30	2,409	—	1,372
1957.....	4,894	1,742	5,488	40	2,559	—	1,451
1958.....	4,890	1,704	5,066	53	2,612	—	1,137
1959.....	5,151	1,725	5,572	72	2,719	—	1,487
1960.....	5,392	1,787	5,540	61	2,811	—	1,233
1961.....	5,889	1,934	5,716	56	2,979	—	928
1962.....	6,387	2,077	6,203	36	3,055	—	830
1963.....	7,082	2,230	6,579	65	3,189	—	521
1964.....	8,238	2,556	7,537	69	3,612	—	424
1965.....	8,745	2,758	8,627	92	3,867	—	1,083

### 17.—Geographical Distribution of the Balance on Current Account Between Canada and Other Countries, 1946-65

(Millions of dollars)

Year	United States <sup>1</sup>	Britain	Other Overseas Countries	All Countries	Year	United States <sup>1</sup>	Britain	Other Overseas Countries	All Countries
1946.....	— 607	+ 500	+ 470	+ 363	1956.....	— 1,650	+ 253	+ 25	— 1,372
1947.....	— 1,134	+ 633	+ 550	+ 49	1957.....	— 1,579	+ 120	+ 8	— 1,451
1948.....	— 393	+ 486	+ 358	+ 451	1958.....	— 1,167	+ 97	— 67	— 1,137
1949.....	— 601	+ 446	+ 332	+ 177	1959.....	— 1,221	+ 16	— 282	— 1,487
1950.....	— 385	+ 24	+ 42	— 319	1960.....	— 1,359	+ 169	— 43	— 1,233
1951.....	— 945	+ 223	+ 210	— 512	1961.....	— 1,341	+ 195	+ 218	— 928
1952.....	— 830	+ 387	+ 630	+ 187	1962.....	— 1,092	+ 225	+ 37	— 830
1953.....	— 907	+ 132	+ 327	— 448	1963.....	— 1,148	+ 417	+ 210	— 521
1954.....	— 800	+ 229	+ 147	— 424	1964.....	— 1,635	+ 605	+ 606	— 424
1955.....	— 1,029	+ 332	+ 10	— 687	1965.....	— 1,912	+ 510	+ 319	— 1,083

<sup>1</sup> Includes all net exports of non-monetary gold.

### 18.—Balance of International Payments Between Canada and All Countries, 1959-65

(Millions of dollars)

Item	1959	1960	1961	1962	1963	1964	1965
<b>Current Receipts—</b>							
Merchandise exports (adjusted).....	5,151	5,392	5,889	6,387	7,082	8,238	8,745
Mutual aid to NATO countries.....	63	43	35	41	23	47	39
Gold production available for export.....	148	162	162	155	154	145	138
Travel expenditures.....	391	420	482	562	609	662	747
Interest and dividends.....	180	171	213	202	230	332	310
Freight and shipping.....	420	442	486	509	563	644	673
Inheritances and immigrants' funds.....	109	102	104	124	151	169	211
All other current receipts.....	414	447	452	484	500	557	640
<b>Totals, Current Receipts.....</b>	<b>6,876</b>	<b>7,179</b>	<b>7,823</b>	<b>8,464</b>	<b>9,312</b>	<b>10,794</b>	<b>11,503</b>
<b>Current Payments—</b>							
Merchandise imports (adjusted).....	5,572	5,540	5,716	6,203	6,579	7,537	8,627
Travel expenditures.....	598	627	642	605	585	712	779
Interest and dividends.....	671	656	764	783	860	1,010	1,071
Freight and shipping.....	525	533	568	595	648	679	755
Inheritances and emigrants' funds.....	165	184	176	175	185	201	211
Official contributions.....	72	61	56	36	65	69	92
Mutual aid to NATO countries.....	63	43	35	41	23	47	39
All other current payments.....	697	768	794	856	888	963	1,012
<b>Totals, Current Payments.....</b>	<b>8,363</b>	<b>8,412</b>	<b>8,751</b>	<b>9,294</b>	<b>9,833</b>	<b>11,218</b>	<b>12,586</b>
Balance on merchandise trade.....	— 421	— 148	+ 173	+ 184	+ 503	+ 701	+ 118
Balance on other transactions.....	— 1,066	— 1,085	— 1,101	— 1,014	— 1,024	— 1,125	— 1,201
<b>Current Account Balance.....</b>	<b>— 1,487</b>	<b>— 1,233</b>	<b>— 928</b>	<b>— 830</b>	<b>— 521</b>	<b>— 424</b>	<b>— 1,063</b>
<b>Capital Account—</b>							
Direct Investment—							
Direct investment in Canada.....	+570	+670	+560	+505	+280	+270	+405
Direct investment abroad.....	— 85	— 50	— 80	— 105	— 135	— 95	— 125
Canadian Securities—							
Trade in outstanding issues.....	+202	+54	+100	— 51	— 131	— 21	— 202
New issues.....	+709	+448	+548	+729	+984	+1,100	+1,209
Retirements.....	— 258	— 266	— 301	— 319	— 404	— 382	— 382
Foreign security transactions.....	— 34	— 19	— 35	— 65	+22	— 52	— 84
Loans and subscriptions by Government of Canada(—).....	+33	+21	+30	+107	+7	—	— 4
Other long-term capital transactions.....	+42	+71	+108	— 113	+14	—	— 104
Change in Canadian dollar holdings of foreigners..	+16	+123	— 27	— 10	+17	+12	+45
Other short-term capital movements.....	+281	+142	+315	+307	+13	— 45	+482
<b>Net Capital Movement, Exclusive of Changes in Official Holdings.....</b>	<b>+1,476</b>	<b>+1,194</b>	<b>+1,218</b>	<b>+985</b>	<b>+667</b>	<b>+787</b>	<b>+1,240</b>
<b>Official Holdings of Gold and Foreign Exchange—</b>							
Change in official holdings.....	— 70	— 39	+ 229	+ 537	+ 60	+ 86	— 11
Change in net International Monetary Fund position.....	+59	—	+61	— 378	+86	+277	+168
Other special international financial assistance....	—	—	—	— 4	—	—	—

### 19.—Current and Capital Account Transactions Between Canada and the United States, 1959-65

(Millions of dollars)

Item	1959	1960	1961	1962	1963	1964	1965
<b>Current Receipts—</b>							
Merchandise exports (adjusted).....	3,191	3,040	3,213	3,767	3,970	4,396	4,993
Gold production available for export.....	148	162	162	155	154	145	138
Travel expenditures.....	351	375	435	512	549	590	660
Interest and dividends.....	97	98	112	120	155	190	204
Freight and shipping.....	228	220	230	259	279	301	327
Inheritances and immigrants' funds.....	52	50	51	61	65	77	91
All other current receipts.....	319	342	336	345	342	359	393
<b>Totals, Current Receipts.....</b>	<b>4,386</b>	<b>4,287</b>	<b>4,539</b>	<b>5,219</b>	<b>5,514</b>	<b>6,058</b>	<b>6,806</b>
<b>Current Payments—</b>							
Merchandise imports (adjusted).....	3,727	3,713	3,828	4,205	4,458	5,204	6,034
Travel expenditures.....	448	462	459	419	388	481	531
Interest and dividends.....	547	535	630	656	727	850	919
Freight and shipping.....	326	324	333	353	378	399	442
Inheritances and emigrants' funds.....	123	142	136	139	152	157	160
Official contributions.....	—	—	—	—	—	—	—
All other current payments.....	436	470	494	539	559	602	632
<b>Totals, Current Payments.....</b>	<b>5,607</b>	<b>5,646</b>	<b>5,880</b>	<b>6,311</b>	<b>6,662</b>	<b>7,693</b>	<b>8,718</b>
<b>Current Account Balance.....</b>	<b>-1,221</b>	<b>-1,359</b>	<b>-1,341</b>	<b>-1,092</b>	<b>-1,148</b>	<b>-1,635</b>	<b>-1,912</b>
<b>Capital Account—</b>							
Direct Investment—							
Direct investment in Canada.....	+428	+461	+366	+328	+220	+188	+353
Direct investment abroad.....	-10	-18	-25	+6	-36	-35	-70
Canadian Securities—							
Trade in outstanding issues.....	+93	+47	+196	+73	-64	-14	-155
New issues.....	+624	+382	+489	+690	+930	+1,040	+1,166
Retirements.....	-212	-214	-220	-247	-315	-300	-326
Foreign security transactions.....	-37	+4	-7	-55	+25	-41	-72
Other long-term capital transactions.....	+41	+84	+154	-115	+83	+175	+68
Change in Canadian dollar holdings of foreigners.....	+8	+59	-23	+27	+7	+16	+10
Other short-term capital movements.....	+377	+169	+381	+366	-21	+610	-518
<b>Net Capital Movement.....</b>	<b>+1,312</b>	<b>+974</b>	<b>+1,311</b>	<b>+1,073</b>	<b>+829</b>	<b>+1,639</b>	<b>+456</b>
<b>Balance Settled by Exchange Transfers.....</b>	<b>-158</b>	<b>+346</b>	<b>+257</b>	<b>+554</b>	<b>+378</b>	<b>+27</b>	<b>+1,499</b>
<b>Official Holdings of Gold and Foreign Exchange—</b>							
Change in holdings.....	-67	-39	+227	+538	+59	+31	+43
Other special international financial assistance.....	—	—	—	-3	—	—	—

### 20.—Current Account Transactions Between Canada and Britain, 1959-65

(Millions of dollars)

Item	1959	1960	1961	1962	1963	1964	1965
<b>Current Receipts—</b>							
Merchandise exports (adjusted).....	782	924	924	924	1,017	1,219	1,184
Travel expenditures.....	18	20	21	22	28	33	34
Interest and dividends.....	35	32	37	28	31	80	40
Freight and shipping.....	80	93	100	98	105	130	136
Inheritances and immigrants' funds.....	26	26	25	28	43	46	51
All other current receipts.....	45	53	54	66	77	102	110
<b>Totals, Current Receipts.....</b>	<b>986</b>	<b>1,148</b>	<b>1,161</b>	<b>1,166</b>	<b>1,301</b>	<b>1,610</b>	<b>1,555</b>
<b>Current Payments—</b>							
Merchandise imports (adjusted).....	618	611	593	578	521	584	624
Travel expenditures.....	62	70	71	71	70	80	89
Interest and dividends.....	90	83	87	85	82	104	91
Freight and shipping.....	85	89	93	88	94	89	95
Inheritances and emigrants' funds.....	26	25	23	18	15	24	30
All other current payments.....	89	101	99	101	102	124	116
<b>Totals, Current Payments.....</b>	<b>970</b>	<b>979</b>	<b>966</b>	<b>941</b>	<b>884</b>	<b>1,005</b>	<b>1,045</b>
<b>Current Account Balance.....</b>	<b>+16</b>	<b>+169</b>	<b>+195</b>	<b>+225</b>	<b>+417</b>	<b>+605</b>	<b>+510</b>



## Section 5.—Canada's International Investment Position\*

Canada's balance of payments is influenced to a considerable extent by the size and character of its balance of international indebtedness, a phrase used in the broad sense generally accepted in balance of payments terminology to include equity investments as well as contractual borrowings. This is true not only through the servicing of capital involving interest, dividends and miscellaneous income payments, but also through the influences of foreign investment on the Canadian economy and on the shape and direction of its external demands.

Canada has been among the world's largest importers of private long-term capital. The very substantial capital formation which was a feature particularly of the 1950s was associated with an unprecedented growth in the country's external liabilities. These investments contributed to a rapid rate of growth in the Canadian economy, particularly in the exploitation of natural resources, and added significantly to Canadian production, employment and income. At the same time they added substantially to the continuing burden of Canada's external debt and to the proportion of Canadian industry controlled by non-residents.

Canada's gross external liabilities amounted to \$32,800,000,000 at the end of 1964; non-resident-owned long-term investments in Canada had reached a book value of \$27,400,000,000 (in the two decades since World War II their value has quadrupled). The part of these investments in establishments controlled outside of Canada totalled \$15,900,000,000. In 1964 direct investments grew rather less rapidly than in earlier years. Investments in other Canadian equities, although smaller, have also been substantial and there have been periods in recent years of sharp increase in foreign holdings of Canadian bonds and debentures.

Investments of non-resident capital have been closely related to the high rate of growth in Canada and to the heavy demands placed on capital markets by this factor and by the financial needs of governments and municipalities. Large development projects have been initiated and financed by investors from other countries and the growth effects from this investment have, in turn, led to Canadian borrowing in capital markets outside of Canada. While capital inflows have been the principal source of the increased indebtedness abroad, another substantial contributor has been the earnings from non-resident-controlled branches and subsidiaries which were retained in Canada. New resource industries depending to a large extent on non-resident financing include all branches of the petroleum industry, iron ore, potash and other mining, aluminum, nickel, pulp and paper, and chemical industries. In addition, secondary industry has also benefited from non-resident investment.

Canada's gross external assets totalled \$12,700,000,000 at the end of 1964 and government-owned assets made up a substantial part of that total. Canada's net balance of international indebtedness, including equity investments, at the same date was estimated at \$20,100,000,000, more than three quarters of which was incurred since 1950.

**Foreign Investments in Canada.**—Dependence upon external sources of capital for financing in periods of heavy investment activity has been characteristic of Canadian development. During the exceptional growth that occurred before World War I, non-resident investment was very high and the main source of that investment was London.

\* An extended historical review appears in DBS report *Canada's International Investment Position, 1926 to 1954* (Catalogue No. 67-503) and more recent statistics in the annual report *Canadian Balance of International Payments and International Investment Position* (Catalogue No. 67-201). Additional detailed material will be found in the annual report under the Corporations and Labour Unions Returns Act.

However, during the first part of the inter-war period, the United States became the principal source of external capital and by 1926 the portion of Canada's international debt owned in that country exceeded that owned in Britain. With some interruption during the 1930s, United States investment in Canada continued to increase, particularly after 1947 when the period of intense activity in the petroleum industry got under way. Over half of the United States investment in Canada at the end of 1964 was accumulated since 1955. At \$21,443,000,000, United States investments in the later year continued to represent more than three quarters of all non-resident investments in Canada and made up 80 p.c. of the increase since 1955. The main rise occurred in direct investments in companies controlled in the United States, which almost doubled in the 1955-64 period. In the same period, portfolio investments in Canada owned in the United States more than doubled, due mainly to large sales of new issues of securities made in that country.

British investments in Canada totalled \$3,463,000,000 at the end of 1964 and accounted for only about 13 p.c. of the total non-resident investments in Canada compared with 36 p.c. at the end of 1939 before most of the wartime repatriations. After reaching a low point in 1948, the value of British investments in Canada increased each year to 1962, declined slightly in 1963, partly as a result of Canadian repatriation of investments in railways and other utilities, and increased again in 1964.

Investments of countries other than the United States and Britain reached a record total of \$2,448,000,000 at the end of 1964. Exceeding three times the 1954 figure, this represented a much higher rate of increase than had occurred in either United States or British investments, and large increases had taken place in portfolio holdings of securities as well as in direct investments. At about 9 p.c. of the total, compared with 6 p.c. in 1954, this group of countries, mostly in Western Europe, accounted for a slightly smaller proportion of total foreign investments than in 1960, 1961 and 1962. Over 90 p.c. of the direct investments, which totalled \$1,044,000,000 in 1964, also came from Western Europe; about one quarter was of Netherlands origin, with Belgian, French, Swiss and German investments making up the next largest groups.

The degree of dependence upon non-resident capital for financing Canadian investment has been relatively much less in the postwar period than in the earlier periods of exceptional expansion, even though the rise in non-resident investments has been so great. Thus, from 1950 to 1953 both the net use of foreign resources and direct foreign financing amounted to about one seventh of net capital formation in Canada. But from 1958 to 1961 when these ratios had increased considerably to 34 p.c. and 47 p.c., respectively, they were still less than the corresponding ratios in the 1929 to 1930 period when inter-war investment activity was at its highest point. In that shorter period more than one half of net capital formation was financed from outside of Canada, and in the period of heavy investment before World War I an even larger ratio of investment was financed by external capital. After 1961 these ratios declined somewhat; from 1962 to 1965 the net use of foreign resources comprised 19 p.c. of net capital formation in Canada and direct foreign financing 43 p.c. In considering these changes it should be noted that for a decade and a half, between 1934 and 1949, Canada was a net exporter of capital and that Canadian assets abroad have been rising over a long period.

It should also be noted that the above ratios relate to the place of non-resident investments in all spheres of development including those where Canadian sources of financing

predominate such as in merchandising, agriculture, housing, public utilities and other forms of social capital. Thus, non-resident financing of manufacturing, petroleum and mining has been much higher than the over-all ratios indicate and has provided the major portion of the capital investment in this field in the period since 1948. The most recent comprehensive calculation of the ratios of non-resident ownership in Canadian manufacturing, mining and petroleum is for the year 1963 and it should be noted that subsequent changes may have increased non-resident ownership even more. In that year the Canadian manufacturing industry was 54 p.c. owned by non-residents but capital subject to foreign control was 60 p.c. These proportions compared with 47 p.c. and 51 p.c., respectively, as recently as the end of 1954. In the field of petroleum and natural gas, non-resident ownership and control amounted to 64 p.c. and 74 p.c., respectively, at the end of 1963, whereas at the end of 1954 non-resident ownership and control had amounted to 60 p.c. and 69 p.c., respectively; in mining and smelting, non-resident ownership and control amounted to 62 p.c. and 59 p.c., respectively, compared with 53 p.c. and 51 p.c. in 1954. However, resident-owned Canadian capital continued to play a leading role in the financing of such areas of business as merchandising, railways and other public utilities. Hence, non-resident ownership in a broad range of business activity, including manufacturing, petroleum, mining, merchandising and railways and utilities, rose only slightly from 32 p.c. in 1948 to 35 p.c. in 1963. But, in the same years, companies subject to non-resident control increased from 25 p.c. to 34 p.c. their share of the total even in this broad area of business, a trend also evident in many subdivisions of the manufacturing and extractive industries.

Another basis of judging the place of foreign-controlled business in Canadian industry is provided by a special study of production and employment in the larger Canadian manufacturing establishments controlled by non-residents. The enterprises having an investment in Canada of \$1,000,000 or more accounted for about 40 p.c. of Canadian manufacturing production in 1961 and 29 p.c. of employment in that field. About 33 p.c. of Canadian manufacturing production and 22 p.c. of employment originated with United States-controlled plants. These ratios in United States-controlled plants were considerably higher than in 1953—the previous year for which a study of this kind was made. In some industries the proportions of production and employment in plants controlled by non-residents were much higher than this. Automobiles, for example, are mainly produced in United States-controlled plants, but this is exceptional. Other industries in which well over one half of the production is in non-resident-controlled firms include the smelting and refining of non-ferrous metals, petroleum refining, motor vehicle parts, aircraft and parts, and industrial chemicals. In several major industries like fruit and vegetable canning and preserving, and miscellaneous machinery and equipment manufacturing the distribution of control between Canadian and foreign-controlled companies is more even. In such industries as pulp and paper mills and miscellaneous food manufacturing, the non-resident share is large although less than one half of the total.

There are, however, many industries where the largest part of production is in Canadian-controlled plants. Prominent among these are such important branches of industry as iron and steel mills, sawmills, feed manufacturing, clothing, and such divisions of the food and beverage group as bakeries, slaughtering and meat packing plants, pasteurizing and butter and cheese plants.



## 21.—Estimate of the Canadian Balance of International Indebtedness, as at Dec. 31, 1945-64

NOTE.—Totals are rounded and may not represent the sum of their components.

(Billions ['000 millions] of dollars)

Item	1945	1949	1959	1960	1961	1962*	1963*	1964
<b>Canadian Liabilities—</b>								
Direct investments.....	2.7	3.6	11.9	12.9	13.7	14.7	15.4	15.9
Government and municipal bonds.....	1.7	1.8	3.1	3.3	3.4	3.7	4.2	4.7
Other portfolio investments.....	2.4	2.3	4.6	4.6	4.7	4.7	4.7	4.7
Miscellaneous investments.....	0.3	0.3	1.3	1.4	1.7	1.8	1.8	2.0
Foreign Long-Term Investments in Canada.....	7.1	8.0	20.9	22.2	23.6	24.9	26.1	27.4
Equity of non-residents in Canadian assets abroad.....	0.2	0.3	1.0	1.1	1.2	1.3	1.4	1.6
Canadian dollar holdings of non-residents	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6
<b>Gross Liabilities<sup>1</sup>.....</b>	<b>7.6</b>	<b>8.7</b>	<b>23.4</b>	<b>24.0</b>	<b>25.4</b>	<b>26.8</b>	<b>28.1</b>	<b>29.5</b>
United States <sup>1</sup> .....	5.4	6.4	17.0	18.0	19.3	20.6	22.0	23.1
Britain <sup>1</sup> .....	1.8	1.8	3.4	3.5	3.5	3.6	3.5	3.6
Other countries <sup>1,2</sup> .....	0.4	0.5	2.1	2.4	2.5	2.6	2.6	2.8
Short-term payables <sup>3</sup> .....	0.6	0.6	1.4	1.6	1.9	2.0	2.3	3.2 <sup>4</sup>
<b>Gross Liabilities.....</b>	<b>8.2</b>	<b>9.3</b>	<b>23.8</b>	<b>25.6</b>	<b>27.3</b>	<b>28.8</b>	<b>30.4</b>	<b>32.8</b>
<b>Canadian Assets—</b>								
Direct investments.....	0.7	0.9	2.3	2.5	2.6	2.8	3.1	3.4
Portfolio investments.....	0.6	0.6	1.2	1.3	1.5	1.7	1.8	1.9
Government of Canada credits.....	0.7	2.0	1.5	1.5	1.4	1.3	1.3	1.5
Government of Canada subscriptions to international investment agencies.....	—	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Miscellaneous investments <sup>5</sup> .....	—	—	—	—	0.1	0.2	0.3	0.4
Canadian Long-Term Investments Abroad.....	2.0	3.6	5.0	5.3	5.7	6.2	6.6	7.3
Government of Canada holdings of gold and foreign exchange.....	1.7	1.2	1.8	1.8	2.2	2.7	2.8	2.9
Net IMF position.....	—	0.1	0.1	0.2	0.2	-0.1	-0.1	0.2
Other Canadian short-term holdings of exchange.....	0.1	0.1	1.0	1.2	1.1	1.0	1.3	1.8
<b>Gross Assets<sup>1</sup>.....</b>	<b>3.9</b>	<b>5.1</b>	<b>8.0</b>	<b>8.5</b>	<b>9.2</b>	<b>9.8</b>	<b>10.6</b>	<b>12.2</b>
Government of Canada holdings of gold, foreign exchange and net IMF position..	1.7	1.3	1.9	2.0	2.4	2.6	2.7	3.1
United States <sup>1,6</sup> .....	1.0	1.3	3.3	3.7	3.9	4.1	4.7	4.9
Britain <sup>1,6</sup> .....	0.7	1.6	1.4	1.5	1.5	1.6	1.9	2.6
Other countries <sup>1,2</sup> .....	0.5	0.9	1.3	1.3	1.4	1.5	1.3	1.6
Short-term receivables <sup>3</sup> .....	0.1	0.2	0.5	0.5	0.5	0.5	0.5	0.4
<b>Gross Assets.....</b>	<b>4.0</b>	<b>5.3</b>	<b>8.5</b>	<b>9.0</b>	<b>9.7</b>	<b>10.2</b>	<b>11.1</b>	<b>12.7</b>
<b>Canadian Net International Indebtedness—Net Liabilities.....</b>	<b>4.2</b>	<b>4.0</b>	<b>15.3</b>	<b>16.6</b>	<b>17.6</b>	<b>18.6</b>	<b>19.3</b>	<b>20.1</b>
Government of Canada holdings of gold, foreign exchange and net IMF position..	-1.7	-1.3	-1.9	-2.0	-2.4	-2.6	-2.7	-3.1
United States <sup>1,6</sup> .....	4.4	5.1	13.6	14.3	15.4	16.5	17.3	18.2
Britain <sup>1,6</sup> .....	1.1	0.2	1.9	2.0	2.0	2.0	1.6	1.0
Other countries <sup>1,2</sup> .....	-0.1	-0.4	0.8	1.1	1.1	1.1	1.4	1.2
Short-term indebtedness <sup>3</sup> .....	0.4	0.4	1.0	1.1	1.4	1.6	1.8	2.8

<sup>1</sup> Excludes short-term receivables and payables.<sup>2</sup> Includes international investment agencies.<sup>3</sup> Country distribution not available.<sup>4</sup> Includes about \$900,000,000 of finance company obligations, some of which were in earlier years shown as long-term investments.<sup>5</sup> Includes reserve against inactive assets.<sup>6</sup> Excludes Government of Canada holdings of gold and foreign exchange.

**22.—Foreign Capital Invested in Canada, by Type of Investment, as at Dec. 31, 1945-64**

(Millions of dollars)

Type of Investment	1945	1951	1959	1960	1961	1962	1963 <sup>1</sup>	1964
Government Securities—								
Federal.....	726	1,013	612	611	657	788	899	897
Provincial.....	624	771	1,585	1,632	1,743	1,862	2,217	2,564
Municipal.....	312	319	915	1,026	1,038	1,087	1,091	1,221
Totals, Government Securities.....	1,662	2,103	3,112	3,269	3,438	3,737	4,207	4,682
Public Utilities—								
Railways.....	1,599	1,436	1,405	1,406	1,366	1,270	1,231	1,236
Other (excluding pipelines and public enterprises).....	493	524	739	743	656	691	590	605
Totals, Public Utilities.....	2,092	1,960	2,144	2,149	2,022	1,961	1,821	1,841
Manufacturing (excluding petroleum refining).....	1,723	2,715	5,726	6,115	6,446	6,731	7,074	7,532
Petroleum and natural gas.....	160	693	3,455	3,727	4,029	4,384	4,703	4,786
Other mining and smelting.....	356	586	1,783	1,977	2,094	2,297	2,347	2,473
Merchandising.....	220	377	878	872	917	972	1,003	1,092
Financial.....	525	595	2,190	2,380	2,616	2,688	2,847	2,503
Other enterprises.....	70	120	284	297	348	366	361	408
Miscellaneous investments.....	284	328	1,285 <sup>2</sup>	1,428	1,696	1,753	1,771	2,037 <sup>2</sup>
Totals, Investment.....	7,092	9,477	20,857	22,214	23,606	24,889	26,134	27,354
United States <sup>3</sup> .....	4,990	7,259	15,826	16,718	18,001	19,155	20,479	21,443
Britain <sup>3</sup> .....	1,750	1,778	3,199	3,359	3,381	3,399	3,331	3,463
Other countries.....	352	440	1,832	2,137	2,224	2,335	2,324	2,448

<sup>1</sup> New series.      <sup>2</sup> Includes \$273,000,000 of Columbia River Treaty receipts.<sup>3</sup> Includes some investments held for residents of other countries.**23.—Foreign Capital Invested in Canada, by Type of Investment, classified by Estimated Distribution of Ownership, as at Dec. 31, 1964**

NOTE.—Common and preferred stocks are at book values as shown in the balance sheets of the issuing companies; bonds and debentures are valued at par; and liabilities in foreign currencies are converted into Canadian dollars at par of exchange.

Type of Investment	Estimated Distribution of Ownership			Total Investments of Non-residents
	United States <sup>1</sup>	Britain <sup>1</sup>	Other Countries	
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Government Securities—				
Federal.....	690	21	186	897
Provincial.....	2,469	61	34	2,564
Municipal.....	1,177	29	15	1,221
Totals, Government Securities.....	4,336	111	235	4,682
Public Utilities—				
Railways.....	491	560	185	1,236
Other (excluding pipelines and public enterprises).....	553	25	27	605
Totals, Public Utilities.....	1,044	585	212	1,841
Manufacturing (excluding petroleum refining).....	6,096	1,077	359	7,532
Petroleum and natural gas.....	3,964	436	386	4,786
Other mining and smelting.....	2,115	211	147	2,473
Merchandising.....	739	273	80	1,092
Financial.....	1,617	501	385	2,503
Other enterprises.....	326	60	22	408
Miscellaneous investments.....	1,206	209	622	2,037 <sup>2</sup>
Totals, Investments.....	21,443	3,463	2,448	27,354

<sup>1</sup> Includes some investments held for residents of other countries.<sup>2</sup> Includes \$273,000,000 of Columbia River Treaty receipts.

**Canadian Assets Abroad.**—Although there has been a great growth in non-resident investment in Canada and in the balance of indebtedness of other countries, it will be noted that Canadian assets abroad, shown in Tables 21, 24 and 25, have continued to rise in value. These now equal a larger proportion of liabilities abroad than was the case before World War II, but more than one quarter of the increase since then has been in government-owned assets such as the official reserves and the loans by the Canadian Government to other governments which were extended during the war and early postwar years. At the end of 1964 the government credits outstanding had a value of \$1,517,000,000 while official holdings of exchange and Canada's net IMF position amounted to some \$3,100,000,000 in terms of Canadian dollars. Other official Canadian assets include Canada's subscriptions to the capital of the International Bank for Reconstruction and Development, the International Development Association and the International Finance Corporation which, by March 1965, amounted to \$80,500,000, \$40,700,000 and \$3,500,000, respectively; these were partly offset by liabilities to these institutions.

The portion of the assets in private investments, particularly in the form of direct investments abroad by Canadian companies, is still small in relation to the corresponding non-resident stake in equities in Canada. Private long-term investments abroad by Canadians in 1964 were made up of direct investments of \$3,356,000,000 and portfolio investments of \$1,932,000,000. About two thirds of the privately owned investments were located in the United States. Direct investments in that country by Canadian businesses have grown rapidly and are found in many fields, among which the beverage and farm implement industries are particularly noteworthy.

Private investments in overseas countries are widely distributed. Somewhat more than one half of the total in 1964 were located in Commonwealth countries, with slightly more in Britain than in the remainder of the Commonwealth. Most of the direct investments in Britain were in industry, while in other Commonwealth countries investments in mining were of almost equal importance with those in industry. In foreign overseas countries the largest part was in the countries of Latin America where Canadian holdings in public utilities are substantial.

#### 24.—Canadian Long-Term Investments Abroad, 1949-64

NOTE.—Excludes investments of insurance companies and banks (held mainly against liabilities to non-residents), Canada's subscriptions to international investment agencies, and miscellaneous investments (Table 21). Holdings of stocks are at book values as shown in the books of issuing companies; holdings of bonds are shown at par values. Foreign currencies are converted into Canadian dollars at current market rates. The series for portfolio investment was reconstructed in 1952 and is not strictly comparable with preceding years.

(Millions of dollars)

Assets	1949	1956	1959	1960	1961	1962	1963*	1964
Direct investments in businesses outside Canada.....	926	1,891	2,295	2,481	2,628	2,821	3,125	3,356
Portfolio holdings of foreign securities.....	638	1,006	1,183	1,315	1,471	1,723	1,796	1,932
Government credits.....	2,000	1,587	1,495	1,462	1,424	1,301	1,285	1,517
<b>Totals.....</b>	<b>3,564</b>	<b>4,484</b>	<b>4,973</b>	<b>5,258</b>	<b>5,523</b>	<b>5,845</b>	<b>6,206</b>	<b>6,805</b>



## 25.—Canadian Long-Term Investments Abroad, by Location, as at Dec. 31, 1964

NOTE.—See headnote to Table 24.

Location of Investment	Direct Investments	Portfolio Investments		Government Credits	Total Investments
		Stocks	Bonds		
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
United States.....	2,025	1,327	118	219	3,689
Britain.....	457	55	15	1,059	1,586
Other Commonwealth countries.....	426	14	32	25	497
Other foreign countries.....	448	246	125	214	1,033
<b>Totals.....</b>	<b>3,356</b>	<b>1,642</b>	<b>290</b>	<b>1,517</b>	<b>6,805</b>

## Section 6.—Government Economic Planning Agencies

## Subsection 1.—The Economic Council of Canada

The Economic Council of Canada, a Crown corporation established by Act of Parliament (SC 1963, c. 11) assented to on Aug. 2, 1963, is an independent economic advisory body with broad terms of reference. Its research, analysis and recommendations on a wide range of economic and social matters are designed to help governments and private groups in developing their own longer-term plans, programs and policies. The Council consists of 28 members appointed by the Governor in Council. Included are a chairman and two directors who serve on a full-time basis in their capacity as professional economists, and 25 part-time members who are representative of industry, labour, finance and commerce, agriculture and of other primary industries, and the general public. There are no officials or representatives of government among its members and the Council has no executive or administrative functions.

The central features of the Council's duties are "to advise and recommend . . . how Canada can achieve the highest possible levels of employment and efficient production in order that the country may enjoy a high and consistent rate of economic growth and that all Canadians may share in rising living standards; to recommend what government policies . . . will best help to realize the potentialities of growth of the economy; to consider means of strengthening and improving Canada's international financial and trade position; . . . to study how national economic policies can best foster the balanced economic development of all areas of Canada . . .". Such duties, and others stated in the Act, encompass the basic economic and social goals that have come to be widely accepted in all modern states. These aims usually are briefly stated as full employment, a high rate of economic growth, reasonable stability of prices, a viable balance of payments, and an equitable distribution of rising incomes. Since the Second World War, in a period of accelerating change, the consistent and simultaneous achievement of such objectives has become a major preoccupation of public policy. An increasing number of countries have sought to develop special procedures and machinery to facilitate the attainment of such goals. The creation of the Economic Council of Canada is a part of this development.

In its *First Annual Review*\* the Council stated its underlying philosophy of approach in this way:—

"We are concerned not with the question of inventing new forms of intervention, but rather with ordering and developing our policies and social programmes in a rational and coherent manner designed to accomplish consistently what the society has declared to be its economic and social goals. For this purpose it is essential to bring to bear the needs of the future on the decisions of today. This applies not only to decisions by governments but also to decisions in the private sector of the economy."

\* Economic Council of Canada, *First Annual Review: Economic Goals for Canada to 1970*. Queen's Printer, Ottawa, December 1964. \$3.50 (Catalogue No. EC 21-1/1964).

In examining the potentialities of the Canadian economy to 1970, the Council in its *First Annual Review* said that the most striking single feature is the tremendous increase in Canada's labour force. The rate of increase in the 1965-70 period is expected to average 2.6 p.c. a year—a rate several times that anticipated in most European countries and well over that in prospect for the United States. Numerically, the Canadian increase would total about 1,000,000 workers in the 1965-70 period. This tremendous labour force growth was considered by the Council in the light of the goal of full employment. In no country does this goal mean that everyone in the labour force must be employed; there is always some voluntary unemployment as well as some that is unavoidable as workers move from one job to another. The Council concluded that 3 p.c. unemployment as an average annual rate would be a practical, realistic objective to be aimed at over the remainder of the 1960s, although it stressed that improved manpower policies (including better labour mobility and higher levels of education and skills) would make it possible to aim at a higher employment potential over the longer term. To attain the "full employment" objective in the face of the large labour force increase, Canada would require a net addition of 1,500,000 jobs in the seven-year period ending in 1970. This is approximately the same gain in total employment that occurred over the previous 14 years.

The Council also placed strong emphasis on increased efficiency—on sustained advances in productivity, which are the essence of economic growth and the real source of improvements in average living standards. Basing its judgment on postwar trends, the Council estimated that, with a reduction of the degree of slack existing in the economy in 1963, output per person employed would increase at an average rate of 2.4 p.c. a year over the period to 1970. This productivity potential was combined with the very rapid rate of expansion required in employment, averaging approximately 3 p.c. a year to 1970, to indicate a potential average rate of growth of output of 5.5 p.c. a year in real terms—that is, in terms of volume, after adjustment for price changes. The Council emphasized that its calculations of potential output to 1970 did not represent forecasts of anticipated trends but rather reasoned appraisals of consistent possibilities for the future. The achievement of such an average annual rate over the whole 1963-70 period would mean an aggregate increase of 50 p.c. in total real output and an increase of over 20 p.c. in real per capita income.

Examining the goal of reasonable stability of prices, the Council said that rates of change in prices and costs to 1970 within Canada's flexible market system should be contained within the limits of the range of movements over the decade from 1953 to 1963. Over this decade, for example, the average annual increases in consumer prices and in prices of all goods and services produced in Canada were 1.4 p.c. and 2.0 p.c., respectively, with some moderate year-to-year variations around these rates.

A "viable balance of payments" was taken by the Council to mean not merely the maintenance of a capability for attaining adequate total international receipts to cover international payments, but also to mean a strengthening of Canada's international economic position in the sense that the possible current account payments deficit (which might be of the order of \$1,500,000,000 to \$2,000,000,000 at potential output in 1970) would be lower in relation to total output (and also that the corresponding net capital inflow would be smaller in relation to domestic investment) than has been the case under comparable past conditions of rapidly rising domestic activity. In short, such a performance would call for some improvement in the basic competitive posture of the Canadian economy.

To meet its interrelated goals and targets, the Council called for an appropriate combination of expansionary measures and policies in the fiscal, monetary and trade fields. In particular, the achievement of its goals would require Canada to participate fully in the new possibilities for an expansion of world trade. There was also a requirement for more adequate measures to facilitate the necessary mobility of productive resources from declining to expanding situations within a rapidly changing economy.

## Economic Performance in Relation to Goals

The goals and objectives originally set by the Council have been reviewed in two subsequent *Annual Reviews*.<sup>\*</sup> Although some of the underlying projections in setting these goals were altered slightly by actual developments in the intervening period, the Council believed that as of early 1967 the over-all goals were still valid as standards for measuring many aspects of Canadian economic performance. In its *Fourth Annual Review*, to be published in the fall of 1967, the Council will examine potential output to 1975, and project likely population and labour force changes to 1980.

In its *Third Annual Review*, published in the fall of 1966, the Council said that, while the economy could move slightly away from several of its goals in the near-term future, the underlying situation still displayed indications of sufficient basic strength and balance to make it unlikely that the country faced the danger of a prolonged or major departure from the goals. The gap between actual and potential output had been virtually eliminated by early 1966. The pace of expansion subsequently moderated, bringing about a more comfortable balance between total demand and supply. However, the Council said that over-all demand forces could re-emerge strongly after a relatively brief interval and, with little or no slack left in the economy, the situation could become one of greater exposure to the dangers of general price and cost increases in the latter half of the 1960s than earlier.

**Production.**—Total output in Canada forged ahead strongly through 1963, 1964, 1965 and the early part of 1966. The economy achieved an average annual rate of growth of over 6 p.c. a year in the volume of total output during that period. Despite the subsequent moderation in this rapid growth rate, the Council emphasized that the potential for further sturdy growth of output was relatively high for the medium-term future. An average annual rate of increase in the total volume of output of close to 5 p.c. from 1966 to 1970 was estimated to be required to attain potential output by the end of the decade.

**Employment.**—In less than four years, from early 1963 to the latter part of 1966, there was an expansion of close to 1,000,000 jobs in Canada. This was a larger absolute increase than occurred in the whole of the 1950s. Unemployment declined from 5½ p.c. in 1963 to less than 4 p.c. toward the end of 1966. Meanwhile, the labour force grew very rapidly and a further increase of 10 p.c. was envisaged by the Council for the 1966-70 period, implying a need for about 750,000 additional jobs over the four-year period. In these circumstances, the Council observed, unemployment could re-emerge very strongly and very quickly if a reasonably strong growth in total demand and output were not maintained over the remainder of the decade.

**Prices and Costs.**—Throughout the world there has been a general and widespread pattern of price increases in recent years. In Canada, consumer prices rose at an average annual rate of about 2.1 p.c. from 1963 to 1965, then accelerated at a rate of close to 4 p.c. a year in 1966. Within the over-all index, the rate of increase in food prices was about double that of consumer services and more than triple that of non-food commodities in 1966. Although food accounts for only about 25 p.c. of the market "basket" used in compiling the over-all index, price increases in the food component accounted for close to one half of the increase in the total index over 1966. Meanwhile, labour costs per unit of output in Canadian manufacturing moved up slightly, relative to those in the United States. In Canada these costs in 1966 were back to the 1960 level. In both countries such costs were less than 5 p.c. above their 1953 levels, however. This contrasts with considerable increases in most other industrially advanced countries. If Canadian unit labour costs in manufacturing are adjusted for the devaluation of the dollar in the early 1960s, then such costs have fallen substantially relative to U.S. costs. Part of this com-

<sup>\*</sup> Economic Council of Canada, *Second Annual Review: Towards Sustained and Balanced Economic Growth*. Queen's Printer, Ottawa. December 1965. \$2.75 (Catalogue No. EC 21-1/1965). Economic Council of Canada, *Third Annual Review: Prices, Productivity and Employment*. Queen's Printer, Ottawa. November 1966. \$2.75 (Catalogue No. EC 21-1/1966).



petitive advantage still remained in 1966, although it has been eroded somewhat by developments since 1964. Surveying increases in basic wage rates over 1966, the Council found that they had been more rapid than at any time in the past decade. Higher costs therefore would continue to work their way through the Canadian economic system for some time. Thus, regardless of underlying economic conditions, it appeared to be inevitable that further significant increases in many lagging prices and costs would continue in Canada in the near-term future.

**Productivity.**—If anything, the rate of increase in Canadian productivity has tended to slow down in recent years. In setting its 1963-70 goals, the Council drew on historical experience that indicated that the economy would achieve an especially rapid rise in non-farm productivity as the gap between actual and potential output was closed. The rise that actually occurred in the 1963-66 period did not measure up fully to the Council's expectations. Nevertheless, the rise in non-farm productivity since 1963 was well above the performance of the late 1950s and also well above the long historical trend. The need in Canada for even greater increases has been emphasized repeatedly by the Council. Gains in productivity are the real basis of increases in the standard of living.

**Investment.**—An extraordinarily large rise in new investment took place in Canada in 1963-66. While total economic output over that period rose by about one third in value and one fifth in volume, total investment spending rose nearly two thirds in value and over two fifths in volume. This expansion took place over a very broad front of new machinery and equipment, business non-residential construction, and government social capital spending. But, despite this, the growth in Canada's productive capacity seems to have been less than the growth in the volume of output. In addition, by 1966, demand pressures on productive resources and capacity created particularly severe strains in the construction industry, especially in certain regions and localities, and this led to worsening bottlenecks and to escalating wage and cost pressures.

### Prosperity and Price Stability

The Canadian experience in the prolonged expansion that began in 1961 serves well to illustrate one of the major, recurrent difficulties faced by modern industrial nations in the postwar period—namely that of achieving reasonable price stability in periods of high growth and rapid gains in employment. In general, the leading nations have demonstrated far better performance in this respect over the past 15 years than in the inter-war period. Much of this improvement can be attributed to a better public understanding of the broad forces at work within modern economies, and to better use of the policies capable of influencing these forces. In particular, there has been a growing appreciation of the importance of total supply and demand within economies and of the role of the "big levers" of fiscal and monetary policy in affecting these aggregates. It is realized that severe inflation is brought about fundamentally by excessive pressure of total demand for goods and services on the available supply, while heavy unemployment is the result of large relative deficiency in demand. It is known that the principal remedy for both of these extreme conditions is the operation of fiscal and monetary policy to restrain or stimulate the growth of total demand as the case may be, and bring it back into a proper relationship with the growth of potential output.

In 1965, the Government of Canada requested the Economic Council to launch a broad examination into prices, costs, incomes and productivity, and their relationship to sustained economic growth. Specifically, the Council was requested to (1) study factors affecting price determination and the interrelation between movements in prices and costs and levels of productivity and income; (2) to report on the relationship to sustained economic growth and to the achievement of high levels of employment and trade and rising standards of living; and (3) to review the policies and experiences of other countries in this field and their relevance for Canada. A substantial part of the Council's *Third Annual Review* was devoted to its report on these matters.

In attempting to reconcile the goals of high employment and reasonable price stability, many countries have adopted what are known as "incomes policies" or "wage-price guidelines". The ways in which these policies and other measures were developed and used in the United States, Britain, France, Sweden and the Netherlands were studied at length by the Council. In general, the Council found that these policies—which in many cases relate permissible price increases to recent levels of productivity—had some educational value but were seldom enforceable without the use or threatened use of government sanctions against parties who violate the guidelines. The effect of such policies was extremely difficult to measure. The Council's study indicated that once an economy is operating at high levels of demand and employment, wage and price increases tend to break through whatever guidelines have been established. Wage-price explosions have often followed periods of comparative stability attributed to incomes policies.

The Council concluded that this type of policy is not well suited to Canadian circumstances. An incomes policy would have the best chance of success in a unitary state, with strong central powers, a tradition of government intervention in the detailed functioning of the economy, and few constitutional impediments to government use of direct controls if necessary; private economic power would be relatively concentrated, and both union and management organizations would be strong and centralized. Obviously, Canada is far indeed from being such an environment. The threat of resort to direct wage and price controls as sanctions would be a hollow threat in Canada; the Federal Government has not now the power to institute such controls in major areas of the economy and in practice has been able to get such constitutional power only in wartime. In addition, regional differences hardly favour such a policy in Canada. Another factor weighing against such a policy is Canada's increasing economic interdependence. Price-increasing developments in international markets—where prices for a wide range of Canadian products are determined—might be bringing about rapid rises in profits and incomes in a number of primary exporting industries, and little could be done about it except to explain to the public why the situation must be tolerated.

The main thrust of the Council's recommendations, therefore, was along the lines of improving the use of basic monetary and fiscal policies, better planning of government expenditures and programs, lessening market rigidities, strengthening competitiveness, promoting greater mobility of resources, including manpower, removing inequities and enlarging public understanding of all these matters. Said the Council: "We feel that for all their troubles and imperfections—for all the static and turbulence which they periodically generate—the essentials of the institutions of free collective bargaining and of flexible and relatively decentralized determination of wages and prices should be preserved. In the long run, they seem likely to be more compatible with good all-round performance by the Canadian economy than any visible alternative."

The Council found that, in the past, Canada's use of fiscal and monetary policies has often been too closely geared to minor, short-term economic fluctuations. They could be used more effectively to stabilize larger economic fluctuations over longer periods—to moderate prolonged pressure against resources, or reduced persistent economic slack. Within this setting, the Council added, further conditions are vital—favourable international conditions, a correct setting of the exchange rate, and adequate complementary policies to improve the supply side of the Canadian economy. The Council found that up to now there has been a relative neglect in Canada of policies to increase supply, both in general and in areas of particular pressures.

One of the main problem areas detected by the Council was that of construction spending. In the postwar period, such spending has shown a special and unique potential for aggravating or even inducing economic instabilities, with consequent repercussions on general costs and prices. Over the past 15 years demand for construction in Canada has swung widely—residential building from a 25-p.c. increase in one year to a 17-p.c. decline two years later, non-residential construction from plus 40 p.c. to minus 9 p.c. over two years, and government construction outlays from plus 32 p.c. to minus 7 p.c. from one year to



the next. The Council said governments must be assigned a major contributing role as a destabilizing element in the over-all construction situation. In all three construction booms since 1950, outlays by all levels of government have reinforced and aggravated the excessive demand on the construction industry. Moreover, in the three recessions since 1950, government construction outlays have declined, adding to the weakness of demand in other sectors of the economy. In the 1963-66 period, demands on the construction industry pressed very hard on its supply capacity. The result was sharply higher wages in construction, strong increases in building materials prices, sharply higher bid prices on new contracts, increases in costs and prices on projects already under way, and fewer bids per construction contract. In such a situation, cost and price increases spill over into a broad front of labour and material resources.

The Council said that, to help stabilize construction demand, it would be appropriate to press for the development of business attitudes encouraging longer-term planning of business investment expenditures. However, the Council also strongly recommended steps to smooth out the growth of government-determined construction. This recommendation applied to all levels of government but the Council believed that the leadership must come from the Federal Government. The Council said that much of the need for government construction is foreseeable for some years ahead and there is room for better government planning and scheduling of such projects in relation to medium-term economic prospects and the likely demand-supply situation in the construction industry in key areas. Within the Federal Government itself, the Council saw a need for greater centralization of information and decision-making about construction expenditures.

The following were among the Council's other conclusions in this area:—

In the interests of better public education and information regarding current economic developments, including those in the field of prices, costs and incomes, steps should be taken to establish an independent institute of economic research along the lines of those already existing in many other countries. A major function of such an institute would be the publication of a regular bulletin containing analysis of short-term developments in the Canadian economy and other articles dealing with significant changes and problems.

A further examination is needed of problems of consumer protection and the exercise of market power in the Canadian economy. The emphasis should be on a consistent and continuous set of policies, based on well-founded and well-understood principles. (The Federal Government recently referred these matters to the Council for special study. The terms of reference are: "In the light of the government's long-term economic objectives, to study and advise regarding (a) the interests of the consumer particularly as they relate to the functions of the Department of the Registrar General; (b) combines, mergers, monopolies and restraint of trade; (c) patents, trademarks, copyrights and registered industrial designs". The Council's work on this special study was well under way in the early part of 1967.)

Much more basic economic research needs to be done on problems relating to prices, costs, incomes and productivity in the Canadian economy. More adequate resources should be made available for these and other areas of economic research. In addition, there is a general and immediate need for improvements in price and other economic statistics. For this purpose, the Dominion Bureau of Statistics should be substantially strengthened.

In the light of underlying factors which have significantly altered the world and the Canadian food situation, and some of which are likely to continue for some time, it is more than ever important that effective measures be taken to increase productivity at all stages of food production and distribution.

Governments should take immediate steps to improve the discharge of their responsibilities as major employers and increasingly large-scale direct participants in the process of collective bargaining. The object should be to develop sound criteria and principles and to avoid disturbing repercussions on the climate of collective bargaining in the private sector of the economy.

Programs for productivity improvement and adequate measures for dealing with the manpower problems arising from technological and other change should be pressed ahead with all possible speed. The programs should operate both at the general and at the



industry and plant level. (In early 1967, the Council published a set of principles to guide labour and management in their efforts to cope with the manpower implication of technological and other changes in industry [see below].)

The annual autumn meetings between federal and provincial finance ministers and treasurers should be developed into a major vehicle for the improvement of longer-term planning and the better co-ordination of expenditure programs and other fiscal matters by the three levels of government. A number of basic economic documents should be published prior to such meetings to serve not only as background for them but also as a basis for stimulating broader public debate about economic developments, problems and potentialities in advance of the formulation of annual budget policies. A standing committee on economic affairs from the Senate and the House of Commons should be established, one of whose functions would be to hold annual hearings on economic issues arising out of the above-mentioned documentation and discussion.

## Education and Economic Growth

The basic role of education as a factor contributing to economic growth and rising living standards was stressed in the Council's *First Annual Review*, especially in the discussion of Canada's vital need for creating and maintaining an adequate supply of professional, technical, managerial and other highly skilled manpower as a basis for future growth. The *Second Annual Review* attempted a closer examination of education as a factor in growth. The Council recognized that its work in this difficult area was in the nature of a pioneering venture, but considered it useful to make some initial findings and conclusions:—

Average years of education per person in the male labour force rose rapidly and fairly steadily from 1910 to 1960 in the United States, with gains of 9 to 10 p.c. in each decade over that half century. The Canadian increases were somewhat more uneven and were also consistently below those in the United States. Consequently, it is estimated that although average years of schooling increased by less than 40 p.c. in Canada, the comparable increase in the United States was about 60 p.c. There has thus been a widening educational gap between the two countries. This gap appears to have widened particularly at the secondary school level in the inter-war years, and particularly at the university level in the postwar period. For example, in 1960 about 45 p.c. of the United States male labour force had four years of high school or more education, compared with only 24 p.c. in Canada in 1961.

The Council estimated that the Canada-U.S. differences in the average educational attainments of their respective labour forces account for approximately one third of the difference in productivity between the two countries. The Council's analysis also suggested a strong relationship between individual income levels and educational attainments. For example, in Canada the average income of those who have completed four to five years high school is more than one and a half times the average of those who have only elementary school education; and those who have university degrees have an average income which is more than two and a half times the average of those with only elementary school education, and more than twice the average of those who have only one to three years of high school.

A rough estimate of the 'profitability' of education can be made by calculating the extra income which on average is associated with a higher level of education, against the extra outlays and costs involved in obtaining such an education. On the basis of such calculations, it was estimated that returns on the 'human investment' in high school and university education in Canada are in the range of 15 to 20 p.c. a year. This is a somewhat higher rate of return than has been calculated for the United States.

The benefits from increased education, according to certain calculations and assumptions, are estimated to have accounted for a share in the general order of one quarter of the increase both in the average standard of living and in the productivity of Canadians from 1911 to 1961. Although this is a large contribution, it is apparently substantially lower than that indicated in comparable estimates for the United States.

Canada now faces a general shortage of manpower with higher educational attainments. The shortages extend from the high school level on up, and are most severe at the professional and university level. These deficiencies in the supply of skills constitute one of the major obstacles to be overcome in achieving a satisfactory rate of improvement in productivity and of economic growth in Canada.

The future benefits from increased efforts in education are very large, and the economic returns to the nation from increased investment in education are likely to exceed by a considerable margin those from most other types of expenditure. This economic gain is complementary to the contribution of education to the human, social and cultural development of individuals.

In the light of these findings, the Council recommended that the advancement of education at all levels be given a very high place in Canadian public policy, and that investment in education be accorded the highest rank in the scale of priorities. In particular, the Council urged that immediate attention be given to:—

- (1) The rapid and substantial expansion of post-secondary education in all parts of Canada. The aim should be to provide a ready opportunity for higher education to every qualified Canadian student so that financial obstacles will be eliminated as a barrier to higher education. A substantial increase in funds for research is a necessary feature of expanded and improved education at the higher levels.
- (2) The closing of the remaining gaps in school facilities and professional resources at the secondary school level so that such education is a real and practical possibility for all Canadian children.
- (3) The development and implementation of greatly expanded programs to upgrade and bring up to date the education and skill qualifications of the existing labour force, including professional workers and management. Continuing education and retraining must play an ever-increasing role in the future.
- (4) Social and other measures to reduce drop-outs in high school to achieve a much higher rate of high school completions.
- (5) Vigorous efforts through research, the use of new techniques, and upgrading the qualifications of teachers to improve the quality and methods of education.
- (6) Closer co-operation between business, labour and the educational system, along with improved counselling of students, regarding future manpower needs and the most effective ways of meeting these needs.

### Regional Growth and Disparities

The problem of assuring an appropriate participation on the part of each region in the over-all process of national economic development has long been an elusive goal and a continuing concern of the people of Canada. The Council's analysis showed that over the past four decades there has been relatively little progress toward the achievement of a better balance in this respect. Despite various policies and programs, very wide disparities have continued to exist in average per capita income. Also, there have continued to be wide differences in the extent to which the human and material resources of each region have found opportunities for productive use. While national prosperity has always tended to have a favourable influence everywhere, rapid national growth has not by itself served to bring about any significant or lasting reduction in these large and stubborn differences.

Regional levels of personal income per capita (in current dollars) are shown for three selected groups of years in the following statement. Provinces are ranked in order of level of income in 1963 and the data are for three-year averages centred on the year shown.

<i>Province</i>	<i>1927</i>	<i>1947</i>	<i>1963</i>
	<i>\$</i>	<i>\$</i>	<i>\$</i>
Ontario.....	509	981	2,025
British Columbia (incl. the Yukon and Northwest Territories).....	535	980	1,966
Alberta.....	509	923	1,750
Saskatchewan.....	449	818	1,749
Manitoba.....	455	875	1,721
Quebec.....	378	709	1,521
Nova Scotia.....	299	676	1,302
New Brunswick.....	277	609	1,167
Prince Edward Island.....	248	477	1,115
Newfoundland.....	...	...	1,009
PROVINCIAL AVERAGE.....	407	783	1,532

The most striking features of the above comparisons are the substantial percentage difference in income levels between the highest and lowest province and the fact that the rankings of the provinces in terms of income levels have hardly changed over a period of almost 40 years.

The Council concluded that efforts to promote more regionally balanced growth should be aimed at achieving a more rapid increase in the incomes of the lagging regions by methods which do not retard the development of the faster-growing areas of the country. In this way the economic growth of the national economy would be improved for the benefit of all regions in Canada. The Council said that, in order to accomplish this result, it is essential that regional development policies be directed to two basic objectives—the increase of opportunities for high-productivity employment and the acceleration of programs which can make the maximum contribution to improvements in productivity generally in the region. The Council suggested the following guidelines for action:—

- (1) the avoidance, as far as possible, of subsidies merely to create temporary activity or to sustain indefinitely low-productivity industries and declining occupations;
- (2) encouragement of efficient agglomerations of activity—growth centres—within the different regions in order to achieve increasing economies of scale, larger markets and more useful pools of skills, and to avoid uneconomic scatter and dispersion;
- (3) the taking of decisions in respect of investments in social capital in accordance with an adequate consideration of the economic and social benefits to be obtained in relation to costs;
- (4) the recognition of the urgent need to make available additional financial resources to the governments of the lower-income regions and through the appropriate federal agencies in order to help break the vicious circle of low productivity, low incomes, low government revenues and low investments in growth-promoting services which are needed to improve the quality and effective utilization of the available human and material resources—in particular, education, training, research, health, transport facilities, resource and industrial development and the development of wider markets;
- (5) the necessity for close co-ordination in the formulation and implementation of consistent regional development policies and programs among all levels of government; this is particularly important in view of the wide range of programs and policies affecting regional development, both on the part of the provinces and through certain federal agencies such as the Atlantic Development Board, the Area Development Agency and the Agricultural and Rural Development Administration; and
- (6) the avoidance of self-defeating restrictive and divisive measures which interfere with the free flow of goods, capital, labour and enterprise between all the provinces; such measures must be avoided if we are to achieve simultaneously the twin goals of more satisfactory growth in every region and a rapid expansion of the national economy from which all would benefit.

The Council observed: "It is clear that the narrowing of inter-regional income disparities and the achievement of a more regionally balanced economic growth involve large, urgent, and especially challenging tasks. Many decades of experience have shown that these tasks cannot be accomplished by piecemeal expenditures, superficial expedients, unproductive works and mere transfers of income. The appropriate policies and programmes will need to be formulated within a long-run consistent framework and carried out with a continuing regard for the real and underlying problems involved."

In its *Third Annual Review*, the Council looked at the economic performance of the various regions during the general expansion that began in 1961. It found that the benefits of this long and vigorous advance were quite widely diffused throughout the country. All regions participated in the growth of income and the rise in living standards, and achieved rates of increase on a per capita basis considerably higher than their long-term historical experience. The growth in employment and the reduction in unemployment was widespread. The capital investment boom was extended to all regions and a substantial expansion of provincial-municipal services was accomplished. Of particular interest was some tentative evidence of inter-regional convergence in earnings per employed person, implying, as it does, some moderation in the wide differences in productivity levels among the major regions. It is clear, nevertheless, that the inherent diversity of the country has made for widely different patterns and an uneven pace of development among the various regions. Briefly stated, the strongest and most diversified gains were achieved in the two highest-income regions, Ontario and British Columbia, where broadly based expansion in total income and employment enabled these provinces to maintain a substantial lead over the remainder of the country.



### Problems of Northern Development

The North embraces a vast, sparsely settled area and presents special economic and physical characteristics, all of which suggest that a separate study of the area is required. The Council hopes by means of future studies to explore ways for effectively promoting development in the North in a manner that will enhance over-all national growth.

In the summer of 1966, members of the Economic Council, at the invitation of the Minister of Indian Affairs and Northern Development, visited several centres in the North. This hurried trip could not be expected to provide time for searching inquiries into conditions and prospects in such a far-flung and difficult frontier area. But the Council came away with certain distinct impressions:—

"It is apparent, first, that while it is customary to speak of the North as a vast single region of severe climate, empty distance, and harsh geography, it is in fact an area of very considerable diversity. It comprises a significant number of different regions, or sub-regions, marked by quite diverse geographic and climatic conditions, possessing varying potentials, facing differing problems, and entering into different stages of economic and social development. Any over-all policy for developing the North must necessarily take adequate account of this diversity, and selective programmes must be adapted to the particular needs and prospects of the varied subregions.

"A second distinct impression is that while the land is vast, virtually unpopulated, and forbidding in many aspects, it undoubtedly possesses significant resources. True, the importance of renewable resources of agricultural land and forests is very limited. But there is no question of the presence of rich and varied mineral resources, including iron, base metals, industrial minerals and fuels. A number of important deposits have already been successfully brought into production; others have been located and are being tested; and the probability is great that further exploration and investigation will continue to yield new and important finds. The whole process of discovery would be stepped up by increased research and the further development and application of new techniques for exploration.

"The longer-run development of the North depends essentially upon the success achieved in the economic exploitation and use of these mineral resources. In this regard it seems clear that some subregions are now approaching the stage of commercial utilization much more rapidly than others. This is generally true of the Yukon and parts of the Western Arctic, not only because more is known as to the existence and quality of resources in these places, but also because difficulties of access, transportation and climate are less formidable than in other areas.

"Even for the more favoured subregions of the North, however, there are two major obstacles to be overcome. The first is the problem of providing transportation and of undertaking the very large capital investments involved in the building of the transport facilities needed to move heavy, primary commodities over long distances to potential markets. The steady extension of such transport links, probably pushing up through the northern reaches of some of the provinces, may well be expected; but careful, long-run national planning will be essential to ensure the best use of available funds and to avoid potentially costly errors. The second problem is equally important. It will require imaginative approaches and special efforts to deal with the particular difficulties of living and working on a permanent basis under northern conditions. This is not just a matter of overcoming a relatively inhospitable climate and supplying the conventional amenities, but even more of providing the kinds of advanced services and the social environment which will help to alleviate a sense of isolation from the advantages of modern urban life. Unless these difficulties can be resolved, it is hard to see how the human resources and human skills necessary for productive development can be attracted and successfully held in the new communities of the North.

"Finally, no visitor to the North can help but be seized by the serious plight of the native people. Whatever the reasons, the impact of modern civilization upon the culture and way of life of the Eskimo and northern Indians has been sudden, drastic and disruptive. Their problem today is both difficult and urgent. The need to improve their economic and social condition, and at the same time to assure them of a rightful participation in the future development of the North, constitutes a pressing challenge to the people of Canada today."

### Labour-Management Relations

The Act establishing the Council also directs it to "encourage maximum consultation and co-operation between labour and management", and to "foster and promote the maintenance of good human relations in industry". In carrying out this function, the Council has convened two national conferences on labour-management relations. The first, held at Ottawa in November 1964, dealt with the state of labour-management co-operation in

Canada generally, and experiments and developments in labour-management co-operation in the United States and a number of European countries, and their relevance for Canada. Discussion at the conference was based primarily on research papers commissioned by the Council. One of the major conclusions of this conference, attended by a widely representative group of business and labour leaders as well as labour relations specialists from governments and universities, was that the complex problems arising from rapid economic change—including technological change—cannot be dealt with adequately by labour and management in the crisis atmosphere of periodic collective bargaining. There was a feeling that existing labour legislation in Canada too often tends to encourage such crisis bargaining, thus inhibiting and frustrating the development of more continuous discussions in co-operative relations needed to deal with the problems of adjustment. The conference also concluded that future meetings of this kind should deal with specific subjects. One of the topics suggested for future conferences was that of the problem of adjustment to technological change.

After considerable study, the Council—itself broadly representative of labour and management as well as of the general public—published in January 1967 a set of principles to guide labour and management in this particular area. The document, "A Declaration on Manpower Adjustments to Technological and Other Change",\* was submitted to a Second National Conference on Labour-Management Relations in Ottawa in March. One of the fundamental points made in this declaration was the need to provide information as early as possible about anticipated change in industry and its manpower implications. The Council regarded this as basic and preliminary to the carrying out of any program of manpower adjustment. The Council said that, although it is impossible to stipulate for all industrial situations what the period of advanced notice should be since so many varying factors are involved, there should be as much advance notice as possible, with a minimum of not less than three months where changes of material significance are involved. Although it may be difficult to apply such minimum advance notice to change arising from a sudden curtailment in the production of an enterprise due to market conditions, it should definitely apply to all changes, with manpower implications, resulting from technological innovations or changes in production or administration methods. The declaration then went on to suggest several steps that could be taken jointly by labour and management to facilitate the adjustment of members of the work force who are directly or indirectly affected by such changes. These steps would include the planned use of attrition, transfer to other jobs, training and retraining, provisions to improve the portability of pension rights, and—where none of these steps prove workable—financial measures to ease the impact of the employee separation. The Council observed that unless these problems arising out of continuous change can be solved, tensions between labour and management inevitably will increase. The Council was hopeful that the declaration would make a significant contribution to the solution of problems in this difficult area and would also contribute significantly to an improvement in the industrial relations climate in Canada.

### Subsection 2.—The Atlantic Development Board

The persistence of the problems of slow growth and low income in the Atlantic region compared with the remainder of Canada has long been of concern to the Federal Government as well as to the governments of the Atlantic Provinces. Policies and programs introduced over the years in an effort to better economic conditions were not entirely successful for various reasons and recently it became imperative that new solutions should be sought and the traditional patterns of economic activity in this area modified. Among the changed approaches was the establishment by the Federal Government of the Atlantic Development Board in 1962 (SC 1962-63, c. 10, as amended by SC 1963, c. 5).

The Board incorporates three essential principles in regional economic development: joint and closely co-ordinated development of programs with the governments of the

\* Economic Council of Canada, *A Declaration on Manpower Adjustments to Technological and Other Change*. Queen's Printer, Ottawa. November 1966. \$0.75 (Catalogue No. EC 22-866).

Atlantic Provinces; a concern with the basic structure of the regional economy and with problem causes rather than symptoms; and, where otherwise not available, federal financial assistance for development projects.

The Board is a special agency, distinct from the regular machinery of governments. Its eleven members are appointed for fixed periods from all the Atlantic Provinces and from diverse fields of activity. It thus has the knowledge, the interest and the freedom to pioneer regional development. Headquarters of the Board are in Ottawa and the staff consists of 55 persons of whom about half are professional. The staff is organized into two functional Divisions—the Program Division is concerned with all aspects of Board projects including economic and engineering investigations and the carrying out of the projects themselves; the Planning Division is responsible for, in consultation with the Economic Council of Canada, the preparation of a co-ordinated plan for the promotion of the growth of the Atlantic region. For obvious reasons, the staff works very closely with officials of other departments and agencies. Each province has a regional committee which works with the Board staff on matters relating to that particular province. When projects are approved, the appropriate department or agency is requested to supervise the work and arrange administrative details on the Board's behalf. Ministers or officials from each of the four provincial governments are designated to act as liaison officers with the Board.

Very broadly, the Board's functions are to prepare a co-ordinated plan for the promotion of the economic growth of the Atlantic region and to recommend programs and projects to cope with or mitigate current problems. In carrying out these functions, the Board is acutely conscious of the interdependence of short-run and long-run policies and the need for consistency among them. Economic growth and development, particularly when based on increased industrial activity, require substantial investment in capital facilities for power, transportation, pure water for industrial purposes, and other services. These facilities, commonly referred to as 'infrastructure', are of basic importance and, for this reason, major emphasis has been placed on this type of investment. Since the construction of such facilities could not be financed by the Atlantic Provinces themselves at this time and on the necessary scale, the Federal Government, in July 1963, established a \$100,000,000 Atlantic Development Fund which, along with annual appropriations, will enable the Board to carry out its functions.

By Mar. 31, 1966, projects costing an estimated \$76,706,069 had been approved and expenditures of \$24,501,698 had been made against that amount, leaving outstanding commitments of \$52,204,371. The projects are as follows:—

<i>Project</i>	<i>Expenditure Approved</i>	<i>Funds Disbursed</i>
	\$	\$
<b>POWER—</b>		
Bay D'Espoir, Nfld.—hydro-electric power development.....	20,000,000	8,530,675
Mactaquac, N.B.—hydro-electric power development.....	20,000,000	8,219,996
Power cable to link Prince Edward Island with mainland.....	4,300,000	—
Newfoundland and Labrador Power Commission conversion to 60 cycles.....	4,000,000	695,637
Maccan to Amherst, N.S.—grant toward cost of power line.....	112,800	—
	<u>48,412,800</u>	<u>17,446,308</u>
<b>TRANSPORTATION—</b>		
Financial Assistance for Trunk Highway Systems—		
Province of New Brunswick.....	3,000,000	3,000,000
Province of Newfoundland.....	3,000,000	1,700,000
Province of Nova Scotia.....	3,000,000	167,250
Province of Prince Edward Island.....	1,000,000	790,209
Financial Assistance for Paving Access Roads to Selected Fishing Ports—		
Province of Prince Edward Island.....	675,000	—
	<u>10,675,000</u>	<u>5,657,459</u>



<u>Project</u>	<u>Expenditure Approved</u>	<u>Funds Disbursed</u>
	\$	\$
<b>OTHER BASIC SERVICES TO INDUSTRY—</b>		
Water Supply and/or Sewage Systems, etc.—		
Fortune, Harbour Grace, Port Union, Fermeuse and Isle aux Morts, Nfld.....	2,326,000	—
Trepassey, Bay de Verde, Burgeo, Gaultois, St. Anthony, Englee and Twillingate, Nfld., and Labrador.....	2,247,000	—
Georgetown, P.E.I.....	850,000	543,863
Canso, N.S.....	747,919	95,747
Shippegan, N.B.....	498,546	152,715
Bonavista, Nfld.....	267,067	31,674
Riverport, N.S.....	242,000	—
Lower East Pubnico, N.S.....	218,775	185,543
Cheticamp, N.S.....	140,000	38,851
Hartland, N.B.....	125,000	—
Milltown, N.B.....	100,000	—
Montague, P.E.I.....	50,000	13,480
Newtown, Nfld.....	50,000	—
Grand Etang, N.S.....	46,629	43,273
<b>Industrial Park Facilities—</b>		
Dorchester Point, N.B.....	1,500,000	—
Stellarton, N.S.....	700,000	—
Lakeside, N.S.....	560,000	—
Saint John, N.B.....	450,000	—
Truro, N.S.....	200,000	—
Summerside, P.E.I.....	118,327	116,174
Abatement of industrial water pollution.....	2,000,000	—
Trawler repair facilities—Marystown, Nfld.....	825,000	—
Boglands clearing—Burin Peninsula, Nfld.....	156,000	—
Fish processing plant—Port Mouton, N.S.....	145,006	8,200
Causeway construction—Montague, P.E.I.....	40,000	22,744
Water pollution metering equipment.....	10,000	9,356
	14,613,269	1,261,620
<b>RESEARCH FACILITIES—</b>		
Financial Assistance for New Research Laboratories and Equipment—		
Halifax-Dartmouth, N.S.....	1,750,000	17,505
Fredericton, N.B.....	1,250,000	115,084
	3,000,000	132,589
<b>SUNDRY EXPENDITURES.....</b>	<b>5,000</b>	<b>3,722</b>
<b>TOTALS.....</b>	<b>76,706,069</b>	<b>24,501,698</b>

In addition, the following technical and economic survey and studies had been undertaken, financed by Parliamentary appropriations of the Department of Transport:—

<u>Survey or Study</u>	<u>1965</u>	<u>1966</u>
	\$	\$
Study of the water supply system of fish processing plants in Newfoundland.....	—	79,990
Study of potash exploration in Nova Scotia.....	—	68,576
Minas Basin foundation study.....	—	55,325
Study of inter-industry flow of goods and services in Atlantic Provinces..	53,555	48,445
Study of demand and supply for hardwood in Atlantic Provinces.....	7,890	42,110
Industrial park studies at various centres.....	7,500	37,500
Engineering investigations for deep water harbour, ore dock and ancillary facilities at Bellidune Point, N.B. (cost shared with Department of Public Works).....	60,429	25,824
Study of transatlantic container shipping operation from ports of Halifax, N.S., and Saint John, N.B.....	3,240	20,736
Economic study of grain trade via Atlantic ports.....	10,000	15,000
Consultant services re power and natural resources.....	17,739	16,636
Water supply study at Come-by-Chance, Nfld.....	—	12,800
Study of waste products of food and beverage industries in Atlantic Provinces.....	—	9,600
Industrial location study.....	—	5,841
Investigation into disparity between per capita personal income in the Atlantic region and the remainder of Canada.....	—	4,568
Analysis of federal expenditures in the Atlantic Provinces.....	—	3,229
Beneficiation research program on silica sand.....	—	3,000

<i>Survey or Study</i>	<i>1965</i>	<i>1966</i>
	\$	\$
Study of transportation network and urban systems of the Provinces of Nova Scotia and New Brunswick .....	—	3,000
Study of export trade of Atlantic Provinces .....	—	2,600
Public information consultant services .....	—	2,400
Pilot industrial opportunity study of Cape Breton Island .....	—	2,000
Office services .....	—	1,126
Beneficiation research program on Wabana iron ore, Bell Island, Nfld. ...	300,000	—
Foundation investigation for tidal power development in Upper Bay of Fundy, N.B. ....	33,973	—
Engineering investigation of suitable water supply system for fishing plant at Shippegan, N.B. ....	11,310	—
Study of economy in Newfoundland since Confederation .....	5,000	—
Economic data, reports and statistics .....	3,750	—
Study of Minto-Chipman, N.B., labour force .....	3,700	—
Inspection services by Department of Public Works engineers .....	899	—
<b>TOTALS .....</b>	<b>518,985</b>	<b>456,306</b>

### Subsection 3.—The Municipal Development and Loan Board

The Act establishing this Board (SC 1963, c. 13) received Royal Assent on Aug. 2, 1963. The Board comprises a chairman and four other members, all senior officials of government, appointed by the Governor in Council, and reports to Parliament through the Minister of Finance. The Board was set up to make loans up to a total amount of \$400,000,000 to municipalities to assist in the construction of additional municipal capital projects, thereby providing increased employment during the period 1963-66. The operations of the Board were therefore envisaged as being temporary and no loans have been made—or could have been made—since Mar. 31, 1966. By that date the Board had approved 2,469 loans to 1,292 separate municipalities across Canada, the total amount of the loans being \$399,250,000. Since loans were limited to two thirds of the project cost, the total amount of construction stimulated by this program was an estimated \$750,000,000. Over one third of the \$400,000,000 loan fund was allotted to help finance municipal water and sewer projects; other types of projects assisted included schools, roads and bridges, rapid transit systems, civic buildings, parks, other recreation facilities, hospitals and municipal power distribution. The program had its greatest impact on construction in the year 1965.

After a municipality obtained a loan commitment from the Board, its normal procedure was to borrow from a bank or to use other forms of pre-financing. When the project was completed and audited, the actual transfer of the loan amount to the municipality took place and forgiveness of 25 p.c. of the loan amount (where applicable) arranged. However, legislation permitted loan advances based on construction progress to be made to some municipalities. By Mar. 31, 1966, final loan payments totalling \$119,000,000 had been made on 718 completed projects, with loan forgiveness amounting to nearly \$30,000,000 being granted. In addition, interim loan advances were made amounting to \$26,500,000 in respect of 125 projects. Thus, although almost the entire \$400,000,000 loan fund was committed to provinces and municipalities by that date, the major portion of the actual loan payments were made or were being made subsequent to that date.

Under the Act, the interest rate to be paid to the Board on these loans was stated to be the effective interest rate on long-term Government of Canada bonds plus not more than one quarter of 1 p.c. In effect, the rates during the period 1963-66 varied between  $5\frac{1}{4}$  p.c. and  $5\frac{3}{8}$  p.c., depending on market conditions at the time. Most loans were for terms of 20 to 30 years, only one being for the maximum permissible maturity of 50 years.

All municipal loan applications were required to be approved by the province concerned before being submitted to the Board. The province concerned was required to certify its approval of the financing and to verify the fact that the project represented additional work over and above the planned capital program of the municipality. Four provinces (Ontario, Quebec, Manitoba and Saskatchewan) chose to deal directly with their own municipalities in respect of most aspects of the program—the province itself made the loan to

the municipality and borrowed the same amount from the Board. The program was administered in Quebec by the Quebec Municipal Commission and by the respective Departments of Municipal Affairs in Ontario, Manitoba and Saskatchewan. In the other provinces the Central Mortgage and Housing Corporation acted on behalf of the Board to receive municipal applications and to provide various advisory services to municipalities.

#### **Subsection 4.—Provincial Government Economic Planning Agencies**

In a number of provinces, economic planning agencies have been set up or are in the formative stage. Only those that are currently active are described here.

#### **The Nova Scotia Voluntary Planning Organization**

During late 1961 and early 1962, the Government of the Province of Nova Scotia concluded that, within its limitations as a provincial government and in keeping with democratic traditions, it could increase the rate of economic growth by undertaking an economic planning program of a voluntary nature. Legislation creating the Voluntary Planning Board was passed in March 1963 by a unanimous vote of the Legislature. The Act stipulates that the Board shall consist of a chairman and a vice-chairman, the number of additional members and their terms of office to be determined by Order in Council. The Act also provides for the appointment of Sector and Segment Committees chosen from appropriate occupations by the Lieutenant-Governor in Council. A Sector is defined as "a primary portion or division of the economy" and a Segment is "a part or sub-division of a sector".

The general function of the Board is to assist and advise the Minister in the development and implementation of measures to increase the rate of economic growth of the province by means of voluntary economic planning. The following specific duties are outlined in the Act:—

- (a) co-ordinate the plans of the various Sectors of the economy and, based on these plans, produce a plan for the whole economy of the province for recommendation to the Minister as one which the Government might adopt;
- (b) collect, collate and disseminate information relative to the economy of the province;
- (c) advise the Government on provincial economic matters;
- (d) watch the performance of the Sectors in carrying out their plans and stimulate and encourage the carrying out of such plans;
- (e) envisage further plans that should be made and provide for continuity of planning for the future, both short- and long-range; and
- (f) conduct or arrange to be conducted such studies and investigations as the Lieutenant-Governor in Council or the Minister requests.

In addition, the Board serves as a liaison between government and people in all economic endeavours.

The Board has published a comprehensive over-all plan for the Nova Scotia economy to 1968 which includes the aims of economic planning and objectives for the first planning period. Detailed Sector plans have been published for agriculture, forestry, tourism, transportation and communications, fisheries, and construction. A special study has been made for the service industries and other studies have been undertaken in conjunction with various Sector plans and the over-all plan.

#### **The Quebec Economic Advisory Council**

An Economic Council was instituted by the Quebec Government in 1943 but it disappeared when the mandate of its members was not renewed at the end of three years, as required by the Act. In 1960, the decision was made to reactivate it under the Act that created it in 1943 and in February 1961 a new Act was passed by the Quebec Legislature establishing the Quebec Economic Advisory Council.

The Council (as at Sept. 1, 1966) is composed of 15 titular members appointed by the Cabinet, which is also authorized to appoint five associate members chosen from among



high officers of the Government. At present, the associate members are the Deputy Ministers of Industry and Commerce, of Agriculture and Colonization, of Natural Resources and of Education and the President of Hydro-Quebec; the associate members attend meetings and take part in discussions but are not entitled to vote. There is also a Management Committee composed of five Advisory Council members, of which the President and the Vice-President are members *ex officio*.

The staff in charge of the administration and the organization of projects, which consists of a general manager and a small group of technical counsellors versed in economic matters, is subject to Civil Service regulations. Its duties consist of extracting the necessary economic syntheses based on fundamental studies made by government departments, boards and other agencies. Analyses of these syntheses are made by committees composed of government representatives, university professors, company heads, etc., and the results are submitted to the Cabinet through the Prime Minister.

Under the Act, the mandate of the Quebec Economic Advisory Council is to organize the province in the economic sphere, foreseeing the most complete utilization of its material and human resources, and to advise the government, upon request or on its own initiative, on all economic questions. The first task is broad and demanding; to elaborate a management plan is to project a complete view of the internal economic trend for a certain number of years, taking into account the correlation of all economic factors, especially population, employment, investments and production. The second task is more of a short-term nature; it consists of giving advice to the government on a particular problem or of suggesting to the Government certain measures dealing with the elaborations of policies.

The first phase of the Council's work was spread over the period 1962-64. Plan elaboration occupied about 15 work groups studying more or less deeply the various sectors of economic activity. The studies brought forward the main difficulties connected with the elaboration and execution of a plan suitable to the needs of the province; the difficulties resulted from lack of personnel, of statistical information and of co-operation between government, management and labour unions; from Quebec's particular economic problems; and from the separation of economic powers between the Government of Quebec and the Federal Government, etc. Since 1964, the Council has instituted deeper studies of five categories of problems leading to the elaboration of: a policy on employment and the labour force; a policy of regional development; a policy on research and productivity; a policy on natural resources; and a policy on public investments.

The Council has fulfilled its task of advising the government by proposing the adoption of measures and the creation of bodies leading to the execution of a future plan. Thus, it recommended to the Cabinet: the establishment of a steel industry; the creation of a General Investment Corporation; the nationalization of power companies; the issuing of Quebec Savings Bonds; the establishment of the Quebec Pension Board; the creation of the Deposits and Investments Fund (*Caisse de dépôts et de placements*); the division of the territory into 10 administrative areas; the recognition of 10 Regional Economic Councils; the creation of a Scientific Research Council; and the establishment of an Industrial Research Centre. Most of the measures recommended by the Council have been adopted by the Government of Quebec.

### **The Ontario Economic Council**

The Ontario Economic Council was established by Order in Council on Feb. 1, 1962. The Council was conceived as a vehicle where representatives of agriculture, labour, management, education, finance and of government could integrate their knowledge and experience of economic affairs, commission research and formulate policy recommendations to the public and private sectors.

Essentially, the Council operates as an advisory body to the Government of Ontario. Some of its findings are reported directly to the government; other reports and recommendations are published and distributed widely. Recent reports cover the fields of tourism, land-use, education, labour and skill-training.

Twenty Ontario citizens serve as members of the Council. Five of these represent a broad cross-section of business and industry, one each from the financial community and the Consumers' Association of Canada, three come from organized labour, three from agriculture, and one from the provincial universities. One member comes from the senior ranks of the Ontario Civil Service. The remaining five are drawn from the Ontario Research Foundation, the Ontario Regional Development Council, The Hydro-Electric Power Commission of Ontario, and the Ontario Northland Railway. Each serves as an individual citizen without compensation. The Council meets monthly in Toronto.

The Council shares the view of the Government of Ontario that the economy of Ontario is not an entity separate from Canada. For this reason the Council does not undertake separately for Ontario what the Economic Council of Canada has done and is doing for Canada as a whole. Projects are undertaken with the Economic Council of Canada on a co-operative basis and information is constantly exchanged between the two Councils.

Another way in which the Ontario Economic Council pursues its responsibilities is through the work of committees. A total of some 40 citizens representing a broad cross-section of the Ontario community make up the following committees: Agriculture, Northern Development, Industrial Development, Industrial Research, and Tourist Industry.

A small permanent Council staff undertakes direct assignments and superintends the design and administration of projects assigned to others. Close contact with government departments avoids unnecessary duplication of effort. Research facilities, academic personnel and graduate students in Ontario universities have been used for certain projects which have included the professional services of members of economics, political science, geography and business administration in the Universities of Windsor, Western Ontario, Toronto, Waterloo, Queen's and York. From time to time the Council engages the professional services of private consulting firms.

### **The Manitoba Economic Consultative Board**

The Manitoba Economic Consultative Board was established under the provisions of the Development Authority Act, 1963, and has been operative since the autumn of that year. It is composed of a chairman and ten members appointed by the Lieutenant-Governor in Council and is representative of the leading elements of the labour and business community. Chairmen of the Manitoba Design Institute, the Manitoba Research Council and the Manitoba Export Corporation serve in an *ex officio* capacity. The Board obtains its funds from the Manitoba Government; its budget in 1965-66 was about \$130,000.

The Board was established as an advisory body to the Manitoba Development Authority, the economic planning and co-ordinating committee of the Executive Council. It is charged with examining Manitoba's long-term prospects for growth, a report on which is published annually and widely distributed. Its staff is involved in an on-going program of research into manpower requirements and long-term economic problems.

Consultation with government, management, agriculture and labour on obstacles to more rapid growth is an integral part of the Board's task. Thus, working with various management groups in the province, the provision of adequate management education programs was examined recently. This led to the formation of the Manitoba Institute of Management Inc., a non-profit private corporation representative of management, educators, labour and government, to provide broad community support for a greatly strengthened program of management education in the province.

Whenever possible the Board co-operates with other provincial councils and with the Economic Council of Canada. With the latter Council, the Board co-sponsored a Conference on Productivity Through New Technology in February 1965.

---

# CHAPTER XXV.—BANKING, OTHER COMMERCIAL FINANCE AND INSURANCE

## CONSPECTUS

	PAGE		PAGE
<b>Part I.—Banking and Other Commercial Finance</b> .....	1118	Subsection 3. Finances of Companies Transacting Life Insurance under Federal Registration.....	1149
SECTION 1. BANKING.....	1118	Subsection 4. Life Insurance in Canada Transacted by Fraternal Benefit Societies.....	1151
Subsection 1. The Bank of Canada.....	1118	Subsection 5. Life Insurance Effected and in Force Outside Canada by Canadian Companies under Federal Registration.....	1153
Subsection 2. Currency.....	1122		
Subsection 3. The Chartered Banks.....	1125	<b>SECTION 2. FIRE AND CASUALTY INSURANCE</b> .....	1155
Subsection 4. Government and Other Banking Institutions.....	1133	Subsection 1. Fire Insurance Transacted in Canada by Companies under Federal Registration.....	1156
<b>SECTION 2. OTHER COMMERCIAL FINANCE..</b>	1135	Subsection 2. Fire Losses.....	1157
Subsection 1. Trust and Mortgage Loan Companies.....	1135	Subsection 3. Casualty Insurance Transacted in Canada by Companies under Federal Registration.....	1158
Subsection 2. Licensed Small Loans Companies and Licensed Money-Lenders...	1140	Subsection 4. Finances of Companies Transacting Fire and Casualty Insurance under Federal Registration.....	1159
Subsection 3. Foreign Exchange.....	1141	<b>SECTION 3. GOVERNMENT INSURANCE.....</b>	1161
Subsection 4. The Bond Market.....	1143	<b>SECTION 4. PENSION PLANS.....</b>	1164
<b>Part II.—Insurance</b> .....	1145		
<b>SECTION 1. LIFE INSURANCE</b> .....	1145		
Subsection 1. Summary of Life Insurance in Canada.....	1146		
Subsection 2. Operational Statistics for Life Insurance Transacted in Canada by Companies under Federal Registration	1146		

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

## PART I.—BANKING AND OTHER COMMERCIAL FINANCE

### Section 1.—Banking

#### Subsection 1.—The Bank of Canada\*

The Bank of Canada is Canada's central bank. It was incorporated under the Bank of Canada Act in 1934 and commenced operations on Mar. 11, 1935. The Act of Parliament which established the central bank charged it with the responsibility for regulating "credit and currency in the best interests of the economic life of the nation", and conferred on it certain specific powers for discharging this responsibility. Through the exercise of these powers, the Bank of Canada determines broadly the combined total of the basic forms of Canadian money held by the community—currency outside banks plus deposit balances in chartered bank accounts.

By virtue of the provisions of the Bank of Canada Act, which enable the central bank to increase or decrease the total amount of cash reserves available to the chartered banks as a group, the Bank of Canada is able to determine broadly the over-all level of the total assets and deposit liabilities of the group, and hence of the combined total of currency and bank deposits. The Bank Act requires that each chartered bank maintain a minimum amount of cash reserves in the form of deposits at the Bank of Canada and holdings of Bank of Canada notes. This minimum requirement is 8 p.c. of the bank's total Canadian

\* Revised by the Research Department of the Bank of Canada.



dollar deposit liabilities on a monthly average basis. The ability of the chartered banks as a group to expand their total assets and deposit liabilities therefore depends on the level of total cash reserves. An increase in cash reserves will encourage the banks to expand their total assets (which consist chiefly of loans and marketable securities) with a concomitant increase in deposit liabilities; a decrease in cash reserves will bring about a decline in their total assets and deposit liabilities as they seek to restore their cash reserve ratios.

The chief method by which the Bank of Canada can affect the level of cash reserves of the chartered banks, and through them the total of chartered bank deposits, is by purchases and sales of government securities. Payment by the central bank for the securities it purchases in the market adds to the cash reserves of the chartered banks as a group and puts them in a position to expand their assets and deposit liabilities. Conversely, payment to the central bank for securities it sells causes a reduction in reserves of the chartered banks and makes it necessary for them to reduce their assets and deposit liabilities.

The influence that the Bank of Canada has on credit conditions and hence on economic behaviour stems from its ability to determine broadly the level of total holdings of currency and chartered bank deposits. The trend of total holdings of these forms of money can have an influence on liquidity generally, including effects on interest rates and bond prices and the availability of credit, and on expectations regarding future financial and economic trends, all of which have some effect on decisions to spend or to save. However, many factors other than changes in the money supply also have important influences on financial and economic developments, such as: the state of economic conditions and prospects outside Canada; the competitive strength of Canadian business enterprises both at home and abroad; the character of the investment decisions and price and wage policies in domestic industries; the skills and degree of mobility of labour; and the nature of public policies at all levels of government with regard to such matters as expenditure, taxation, subsidies and the regulation of industry. In forming its judgments, the Bank of Canada is bound by criteria laid down by Act of Parliament in the preamble to the Bank of Canada Act of 1934. Its operations must be based, not on any simple mechanical formula, but rather on continuous observation and appraisal of the constantly changing state of the economy as reflected in the complex pattern of economic and financial developments.

Although the Bank of Canada has the power to determine the combined total of currency and chartered bank deposits, it has no means of determining how much of this total is held in the form of currency and how much in the form of chartered bank deposits. That depends on the wishes of the public, since deposits can be converted freely into notes and coin and back again. Nor does the Bank have any direct control over the growth of other forms of money or of close substitutes for money as a store of wealth in liquid form, of which there are many varieties in Canada—mainly deposit balances in savings institutions other than chartered banks and short-term securities issued by governments and corporations.

The cash reserve system in Canada, which is similar to that in a number of other countries, while placing the central bank in a position where it can determine within broad limits the total amount of chartered bank assets and deposits, leaves the allocation of bank credit and other forms of credit to the private sector of the economy. Each chartered bank can attempt to gain as large a share as possible of the total cash reserves by competing for deposits. Each bank determines how its assets will be distributed, for example, between various kinds of securities and loans to various types of borrowers. The Bank of Canada has no power to direct banks or other lenders to make funds available to certain groups or in certain regions on the same terms or on different terms than to other groups or in other regions. The influence of the central bank—based in essence on its power to expand or contract chartered bank cash reserves through its market purchases or sales of securities—is both indirect and impersonal and is brought to bear on financial conditions generally through the chartered banks and the numerous inter-connected channels of the capital market.

The powers of the Bank are set forth in the Bank of Canada Act, 1934 (RSC 1952, c. 13), revisions in which were made in 1936, 1938, 1954 and 1967. Some of these powers are outlined in the 1965 Year Book at pp. 1031-1032.

The Bank is under the management of a Board of Directors composed of a Governor, a Deputy Governor and twelve Directors. The Governor and Deputy Governor are appointed for terms of seven years each by the Directors, with the approval of the Governor General in Council. The Directors are appointed by the Minister of Finance, with the approval of the Governor General in Council, for terms of three years each. The Deputy Minister of Finance is a member of the Board but does not have the right to vote. There is an Executive Committee of the Board composed of the Governor, the Deputy Governor, one Director and the Deputy Minister of Finance (who is without a vote) which has the same powers as the Board except that its decisions must be submitted to the Board at its next meeting. In addition to the Deputy Governor who is a member of the Board, there may be one or more Deputy Governors appointed by the Board of Directors to perform such duties as are assigned by the Board.

The head office of the Bank is at Ottawa. It has agencies at Halifax, Saint John, Montreal, Ottawa, Toronto, Winnipeg, Regina, Calgary and Vancouver and is represented in St. John's and Charlottetown.

### 1.—Assets and Liabilities of the Bank of Canada, as at Dec. 31, 1962-66

Item	1962	1963	1964	1965	1966
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
<b>Assets</b>					
Foreign exchange.....	47.4	42.4	97.6	28.3	55.2
Bankers' acceptances.....	3.3	—	—	—	—
Investments—					
Treasury bills of Canada.....	455.2	465.6	478.7	608.1	409.1
Other securities issued or guaranteed by Canada maturing within 2 years.....	446.6	688.0	349.2	477.7	737.8
Other securities issued or guaranteed by Canada not maturing within 2 years.....	1,980.8	1,881.7	2,236.5	2,330.8	2,272.4
Bonds and debentures issued by Industrial Development Bank.....	127.1	150.6	176.5	200.7	239.8
Other securities.....	25.7	21.5	13.4	14.0	171.7
Industrial Development Bank capital stock.....	31.0	33.0	36.0	39.0	42.0
Bank premises.....	10.7	11.8	13.2	16.3	16.5
All other assets.....	103.3	150.4	240.8	240.9	262.3
<b>Totals, Assets.....</b>	<b>3,231.1</b>	<b>3,444.9</b>	<b>3,641.9</b>	<b>3,955.8</b>	<b>4,206.8</b>
<b>Liabilities</b>					
Capital paid up.....	5.0	5.0	5.0	5.0	5.0
Reserve Fund.....	25.0	25.0	25.0	25.0	25.0
Notes in Circulation—					
Held by chartered banks.....	416.8	418.4	355.1	382.7	438.1
All other.....	1,817.0	1,886.2	2,025.5	2,152.9	2,295.5
Deposits—					
Government of Canada.....	42.9	49.4	68.9	116.2	34.1
Chartered banks.....	745.6	811.4	882.1	1,034.2	1,111.3
Other.....	38.1	38.9	35.6	34.5	29.7
Foreign currency liabilities.....	61.1	52.8	44.9	30.8	36.9
All other liabilities.....	79.6	157.8	199.8	174.3	231.2
<b>Totals, Liabilities.....</b>	<b>3,231.1</b>	<b>3,444.9</b>	<b>3,641.9</b>	<b>3,955.8</b>	<b>4,206.8</b>

**The Industrial Development Bank.**—The Industrial Development Bank, a subsidiary of the Bank of Canada, was incorporated by Act of Parliament during 1944 and its banking operations commenced on Nov. 1, 1944. Its functions are described in the preamble to the Act as follows:—

“To promote the economic welfare of Canada by increasing the effectiveness of monetary action through ensuring the availability of credit to industrial enterprises which may reasonably be expected to prove successful if a high level of national income and employment is maintained, by supplementing the activities of other lenders and by providing capital assistance to industry with particular consideration to the financing problems of small enterprises.”

The President of the Industrial Development Bank is the Governor of the Bank of Canada and the Directors are the Directors of the Bank of Canada and the Deputy Minister of Trade and Commerce. The authorized capital of the Bank is \$50,000,000 and it may also raise funds by the issue of bonds and debentures provided that its total direct liabilities and contingent liabilities in the form of guarantees and underwriting agreements do not exceed five times the aggregate of the Bank's paid-up capital and Reserve Fund.

The Bank may extend financial assistance to industrial enterprises in Canada which, by definition in the Act, include any industry, trade or other business undertaking of any kind. With respect to such enterprises the Bank is empowered to lend money or guarantee loans and where an enterprise is a corporation the Bank may also enter into underwriting agreements with regard to any issue of stock, bonds or debentures; acquire stock, bonds or debentures from the issuing corporation or any person with whom the Bank has entered into an underwriting agreement; and acquire certificates issued by a trustee to finance the purchase of transportation equipment. The total amount of commitments of the Bank, in the form of loans, guarantees, etc., in excess of \$200,000 each, may not exceed \$200,000,000.

The Bank may accept any form of collateral security against its advances, including realty and chattel mortgages which constitute the usual kind of security taken. The Bank is intended to supplement the activities of other lending agencies, not to compete with them, and the Act of Incorporation provides that it should extend credit only when, in the Bank's opinion, credit or other financial resources would not otherwise be available on reasonable terms and conditions. Its lending takes the form of fixed-term capital loans rather than current operating loans. The Bank is specifically prohibited from engaging in the business of deposit banking. It has branch offices in the following cities: St. John's, Halifax, Saint John, Moncton, Rimouski, Quebec, Trois-Rivières, Montreal, Ottawa, Toronto, Hamilton, Waterloo, London, Windsor, Sudbury, Port Arthur, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Kelowna, Vancouver, Victoria and Prince George.

## 2.—Assets and Liabilities of the Industrial Development Bank, as at Sept. 30, 1962-66

Item	1962	1963	1964	1965	1966
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
<b>Assets—</b>					
Loans outstanding <sup>1</sup> .....	164.9	200.9	224.2	255.1	298.1
Other assets.....	2.2	3.7	5.2	6.9	7.0
<b>Totals, Assets.....</b>	<b>167.1</b>	<b>204.6</b>	<b>229.4</b>	<b>262.0</b>	<b>305.1</b>
<b>Liabilities—</b>					
Capital and reserves.....	49.0	53.3	57.0	61.7	66.2
Bonds and debentures outstanding.....	115.3	147.6	168.1	195.4	232.8
Other liabilities.....	2.8	3.7	4.3	4.9	6.1
<b>Totals, Liabilities.....</b>	<b>167.1</b>	<b>204.6</b>	<b>229.4</b>	<b>262.0</b>	<b>305.1</b>
<b>Loan Transactions—</b>					
Disbursements.....	74.3	74.0	69.5	81.1	98.1
Repayments.....	32.6	38.2	46.2	50.2	55.2
Loans outstanding plus undistributed authorizations.....	203.6	232.6	264.2	297.8	350.6
	No.	No.	No.	No.	No.
Customers on books.....	4,083	5,105	6,028	6,962	7,870

<sup>1</sup> Includes investments; the change in loans outstanding does not equal the difference between disbursements and repayments because of year-end accounting adjustments.



**Subsection 2.—Currency**

**Note Circulation.**—The development by which bank notes became the chief circulating medium in Canada prior to 1935 is described in the 1938 Year Book, pp. 900-905. Those features of the development which then became permanent are outlined in the 1941 Year Book, pp. 809-810.

When the Bank of Canada commenced operations in 1935 it assumed liability for Dominion notes outstanding. These were replaced in public circulation and partly replaced in cash reserves by the Bank's legal tender notes in denominations of \$1, \$2, \$5, \$10, \$20, \$50 and \$100. Deposits of chartered banks at the Bank of Canada completed the replacement of the old Dominion notes of \$1,000 to \$50,000 denomination that had previously been used as cash reserves. The chartered banks were required under the Bank Act of 1934 to reduce gradually the issue of their own bank notes during the years 1935-45 to an amount not in excess of 25 p.c. of their paid-up capital on Mar. 11, 1935. Bank of Canada notes thus replaced chartered bank notes as the issue of the latter was reduced. Further restrictions introduced by the 1944 revision of the Bank Act cancelled the right of chartered banks to issue or re-issue notes after Jan. 1, 1945, and in January 1950 the chartered banks' liability for such of their notes issued for circulation in Canada as then remained outstanding was transferred to the Bank of Canada in return for payment of a like sum to the Bank of Canada.

**3.—Bank of Canada Note Liabilities, as at Dec. 31, 1962-66**

Denomination	1962	1963	1964	1965	1966
	\$'000	\$'000	\$'000	\$'000	\$'000
Bank of Canada Notes—					
\$1.....	91,426	94,853	97,742	103,115	109,846
\$2.....	63,837	66,670	68,768	73,328	78,874
\$5.....	162,643	167,743	172,752	183,057	196,893
\$10.....	548,442	558,688	574,516	608,351	668,153
\$20.....	766,974	811,119	841,002	904,872	983,765
\$25.....	46	46	46	46	46
\$50.....	155,938	158,277	163,419	173,580	188,131
\$100.....	413,460	415,563	429,093	453,687	471,550
\$500.....	37	37	34	33	33
\$1,000.....	17,951	18,603	20,181	22,597	23,377
Totals.....	2,220,755	2,291,600	2,367,553	2,522,666	2,720,668
Note issues in process of retirement <sup>1</sup> .....	13,067	13,044	13,006	12,984	12,966
<b>Totals, Bank of Canada Note Liabilities...</b>	<b>2,233,822</b>	<b>2,304,644</b>	<b>2,380,559</b>	<b>2,535,650</b>	<b>2,733,634</b>
Held by—					
Chartered banks.....	416,845	418,405	355,086	382,703	438,090
Others.....	1,816,977	1,886,239	2,025,473	2,152,947	2,295,544

<sup>1</sup> Includes, in 1966, chartered banks' notes \$8,214. Dominion of Canada notes \$4,637, provincial notes \$28 and defunct banks' notes \$88; these amounts have changed little in recent years.

## 4.—Note Circulation in the Hands of the Public, as at Dec. 31, 1957-66

As at Dec. 31—	Bank of Canada Notes <sup>1</sup>	Per Capita	As at Dec. 31—	Bank of Canada Notes <sup>1</sup>	Per Capita
	\$	\$		\$	\$
1957.....	1,555,115,143	93.63	1962.....	1,816,977,132	97.84
1958.....	1,659,870,299	97.18	1963.....	1,886,238,792	99.82
1959.....	1,704,822,198	97.51	1964.....	2,025,473,300	105.30
1960.....	1,731,902,386	96.92	1965.....	2,152,947,110	110.01
1961.....	1,800,190,122	98.70	1966.....	2,295,543,656	115.24

<sup>1</sup> Total issue less notes held by chartered banks.

**Coinage.\***—Under the Currency, Mint and Exchange Fund Act (RSC 1952, c. 315), gold coins may be issued in denominations of twenty dollars, ten dollars and five dollars (nine-tenths fine or millesimal fineness, 900). Subsidiary coins include: silver coins in denominations of one dollar, 50 cents, 25 cents, 10 cents (eight-tenths fine or millesimal fineness, 800); pure nickel five-cent coins; and bronze (copper, tin and zinc) one-cent coins. Provision is made for the temporary alteration of composition in event of a shortage of prescribed metals. A tender of payment of money in coins is a legal tender in the case of gold coins issued under the authority of Sect. 4 of the Currency, Mint and Exchange Fund Act for the payment of any amount; in the case of silver coins for the payment of an amount up to \$10; nickel coins for payment up to \$5; and bronze coins up to 25 cents.

It was announced in December 1966 that the Royal Canadian Mint will change from silver to pure nickel for coinage of the three main silver coins currently in use—the 10-cent, 25-cent and 50-cent coins; the production of silver dollars will continue. The change will require amendments in the Currency, Mint and Exchange Fund Act, which are to be submitted to Parliament in 1967, and become effective during 1968.

## 5.—Canadian Coin in Circulation, as at Dec. 31, 1956-65

NOTE.—The figures shown are of net issues of coin. Figures from 1901 are given in the corresponding table of previous Year Books beginning with the 1927-28 edition.

As at Dec. 31—	Silver	Nickel	Tombac <sup>1</sup>	Steel	Bronze	Total	Per Capita
	\$	\$	\$	\$	\$	\$	\$
1956.....	100,922,477	8,545,507	552,868	3,456,782	13,742,282	127,219,916	7.91
1957.....	107,116,450	8,910,869	550,743	3,455,886	14,745,243	134,779,191	8.11
1958.....	115,120,076	9,289,481	549,630	3,455,062	15,322,156	143,736,405	8.42
1959.....	123,344,059	9,865,012	549,237	3,454,209	16,150,222	153,362,739	8.77
1960.....	136,710,958	11,599,263	549,090	3,452,876	16,895,953	169,208,140	9.47
1961.....	146,902,352	14,110,198	549,021	3,451,708	18,311,853	183,325,132	10.05
1962.....	162,928,707	16,433,088	549,009	3,450,676	20,595,543	203,957,023	10.98
1963.....	180,492,972	18,627,687	548,999	3,449,476	23,383,788	226,502,922	11.99
1964.....	206,551,965	22,522,116	548,996	3,448,547	28,009,356	261,080,980	13.57
1965.....	239,927,246	26,397,784	548,989	3,447,516	30,968,064	301,289,599	15.39

<sup>1</sup> Tombac, a copper-zinc alloy, was used to conserve nickel for war purposes; no coins of this metal have been issued since 1944.

**The Royal Canadian Mint.\***—The Ottawa Mint, established as a branch of the Royal Mint under the (Imperial) Coinage Act of 1870, was opened on Jan. 2, 1908. On Dec. 1, 1931, it became the Royal Canadian Mint and now operates as a branch of the Department of Finance.

\* Revised by the Master of the Royal Canadian Mint, Ottawa.

The principal functions of the Mint are the execution of domestic and foreign coin; the refining of gold and silver; the acquisition of gold, silver and other metals, payments for which are made on the basis of Mint assays; the control, preparation and movement of gold and coin shipments; the safeguarding of Mint holdings of monetary metals, including coin and precious metals in various processing stages until finished and issued; the fabrication and engraving of dies for coinage, medals, signatures and official seals; the issue of coin sets to numismatists and the administration of various regulations issued under the terms and provisions of the Currency, Mint and Exchange Fund Act (RSC 1952, c. 315).

#### 6.—Receipts of Gold Bullion at the Royal Canadian Mint and Bullion and Coinage Issued, 1956-65

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Year	Gold Received	Gold Bullion Issued	Silver Coin Issued	Nickel Coin Issued	Bronze Coin Issued
	oz. t.	oz. t.	\$	\$	\$
1956.....	3,801,789	3,774,599	5,389,464	469,993	786,855
1957.....	3,896,084	3,776,711	6,236,429	366,493	1,004,221
1958.....	3,958,459	4,088,706	8,044,753	379,616	578,274
1959.....	3,908,640	3,836,680	8,273,563	576,680	829,116
1960.....	4,024,626	4,014,771	13,432,251	1,735,707	748,101
1961.....	3,800,137	3,812,054	10,299,581	2,512,369	1,417,544
1962.....	3,488,974	3,520,406	16,114,240	2,324,212	2,284,925
1963.....	3,457,092	3,467,554	17,688,668	2,196,217	2,790,679
1964.....	3,188,868	3,173,573	26,153,154	3,895,746	4,626,963
1965.....	2,991,450	3,026,974	33,479,378	3,877,921	2,961,126

**Dollar Currency and Bank Deposits.**—Bank of Canada statistics concerning currency and chartered bank deposits are given in Table 7.

#### 7.—Canadian Dollar Currency and Chartered Bank Deposits, as at Dec. 31, 1957-66

(Millions of dollars)

As at Dec. 31—	Currency Outside Banks			Chartered Bank Deposits				Total Currency and Chartered Bank Deposits <sup>1</sup>		
	Notes	Coin	Total	Personal Savings Deposits	Government of Canada Deposits	Other Deposits <sup>1</sup>	Total <sup>1</sup>	Total Including Government Deposits	Held by General Public	
									Including Personal Savings Deposits	Excluding Personal Savings Deposits
1957.....	1,555	112	1,667	6,108	423	3,725	10,256	11,923	11,500	5,392
1958.....	1,660	121	1,781	6,844	319	4,303	11,466	13,247	12,927	6,084
1959.....	1,705	128	1,832	6,900	404	4,057	11,360	13,193	12,789	5,890
1960.....	1,732	144	1,876	7,215	510	4,313	12,037	13,914	13,404	6,189
1961.....	1,800	158	1,958	7,618	588	4,998	13,205	15,163	14,575	6,957
1962.....	1,817	177	1,994	7,932	564	5,193	13,689	15,683	15,119	7,187
1963.....	1,886	198	2,084	8,443	914	5,623	14,980	17,064	16,150	7,707
1964.....	2,025	229	2,254	8,935	696	6,164	15,795	18,049	17,353	8,418
1965.....	2,153	266	2,419	9,725	797	7,201	17,723	20,142	19,345	7,576
1966.....	2,296	293	2,589	10,248	919	7,741	18,908	21,497	20,578	10,330

<sup>1</sup> Less total float, i.e., cheques and other items in transit.



### Subsection 3.—The Chartered Banks\*

The Canadian commercial banking system consists of ten privately owned banks, chartered by Parliament and operating under the provisions of the Bank Act.† Of the eight in operation, five are nation-wide institutions; two operate mainly in Quebec and in other French-speaking areas and one, affiliated with a New York bank, has branches in six large cities. At Sept. 30, 1966, these banks together operated 6,031 banking offices of which 5,802 were in Canada and 229 abroad. Thus, the chief distinguishing feature of the Canadian banking system is the relatively small number of large banks having an extensive network of branches, operating under a single legislative jurisdiction (the Federal Government) and under one detailed and comprehensive statute (the Bank Act).

Since the first banks were established during the first quarter of the nineteenth century, the commercial banking system has developed in response to the changing needs of the Canadian economy, an evolution which is still in rapid progress. Canadian economic development has been characterized by two main features—successive but by no means continuous periods of rapid geographical expansion of settlement, and a continued dependence on export markets as new natural resources (agricultural land, forests and minerals) were exploited. Thus, Canadian banking has continually had to migrate to new areas and to find appropriate methods of financing new industries and new products; and it has from the beginning possessed a strongly ‘international’ character‡ with much emphasis on the financing of foreign trade, on foreign exchange operations, and on correspondent relations with foreign banks. At the same time, as regional isolation has gradually broken down and the economy has been integrated, banks originating in local areas have become part of a nation-wide banking system, in part by process of amalgamation particularly marked in the first twenty-five years of the present century.

### Bank Legislation

From the first, banks in what is now Canada sought to operate under Acts of incorporation (charters) passed by the legislatures of the colonies in which they operated. As new banks were incorporated and older ones obtained charter renewals, there developed in the bank charters themselves a quite extensive and fairly uniform code of banking law. At Confederation, responsibility for banking and currency was given to the Dominion Government and in 1871 the first general Bank Act was passed. This legislation is subject to review and revision every ten years, a feature that has helped to keep the banking system adapted to the needs of a changing economy. The decennial revision was due in 1964, but the Bank Act was extended in order to provide time to consider recommendations made by the Royal Commission on Banking and Finance established in 1961; the Commission's report was published in 1964.††

The Bank Act has become a most detailed and comprehensive piece of legislation which provides for the internal regulation and organization of the banks, for the auditing of their accounts, and for the ways in which their capital stock may be issued and transferred, their dividends paid, and their affairs settled in case of amalgamation, winding-up or insolvency. In addition, it states what cash reserves the banks must keep, what reports they must make to the Government and to the Bank of Canada about their affairs and sets forth a variety of rules governing the conduct of business with the public. The Bank Act also specifies the maximum rate of interest that may be charged on bank loans. (Since the 1944 Bank Act revision this ceiling has been 6 p.c., replacing the 7-p.c. ceiling that

\* More detail is included in an article appearing in the 1961 Year Book, pp. 1115-1120, prepared by J. Douglas Gibson, General Manager of The Bank of Nova Scotia. The early history of currency and banking in Canada is given in the 1938 Year Book, pp. 900-905. A list of the banks at Confederation appears in the 1940 Year Book, p. 897, and bank absorptions since 1867 are given in the 1941 edition, pp. 812-813. A table in the 1937 Year Book, pp. 894-895, shows the insolvencies since Confederation; the last insolvency occurred in 1923.

† The Bank of Western Canada and the Bank of British Columbia were chartered by Parliament but had not commenced operations as of Feb. 28, 1967.

‡ The larger Canadian banks have long maintained offices in London and New York. In addition, some Canadian banks for more than half a century have been providing an important part of the commercial banking facilities in the Caribbean area (see Table 10, p. 1129).

†† At time of writing, the Bank Act revision was before Parliament; see Chap. XXVII, Pt. V, outlining Federal Legislation, 1966-67.

had prevailed since 1871.) The banks derive their corporate existence from the Act, which states that "each bank . . . is a body politic and corporate and this Act is its charter"; successive Bank Acts have empowered the banks to do business for a period of ten years, until the next revision of the Act.

### **Banking Operations**

Operating under the Bank Act, the chartered banks at their branches accept deposits from the public, make loans covering a wide range of commercial, industrial, agricultural and consumer activities, deal in foreign exchange, receive and pay out Bank of Canada notes and coin, provide safekeeping facilities, and perform a variety of other services coming within the scope of the general business of banking. The head office of a Canadian bank does not transact ordinary day-to-day business with the public; it performs general administration and policy-making functions, manages the bank's investment portfolio, does its centralized accounting work, and maintains specialized departments devoted to inspection of branch operations, the development of branch office methods, the acquisition of new business, premises, staff, arrangements with foreign banks, advertising, etc.

Under its branch system, Canadian banking is able to provide standard banking facilities throughout the country. Every branch, even the smallest, can provide all banking services and each has behind it the resources of a large bank, which means that lending requirements can be met just as well by a branch in a small town or a suburban branch as in the main branches of a large city. Branch banking also provides an excellent training for Canadian bank officers through the system of promotion and transfer from branch to branch. Almost without exception, the chief executives of the Canadian banks have grown up in the service and have been trained in this way.

The branch system has proved to be most flexible and Canadian banking has been able to keep pace with settlement and economic development during its periods of most rapid growth. Particularly during the past quarter-century, with a rapidly expanding economy, sharply rising population and growing urbanization, new branches have opened at a very rapid rate. Banking offices in Canada, which numbered about 3,300 at the end of 1939 and 3,100 at the end of 1945, grew by over 2,900 in the next 21 years. As this growth suggests, Canadian banks have taken full advantage of the recent expansive atmosphere to extend the volume and variety of their services to industry and to individuals. Strongly competing for customers, they offer a wide variety of new deposit arrangements, including new savings programs, new forms of chequing accounts and greatly broadened lending facilities.

By the end of the War, the banks had experienced more than fifteen years of restricted demand for commercial credit; at the end of 1945 security holdings accounted for about 55 p.c. of the banks' total assets, compared with a little over 40 p.c. just before the War and only about 15 p.c. in 1930. In the early postwar years, the economic control apparatus created for the War was gradually dismantled. The expansion of the private sector of the economy and the contraction of the government sector were quickly reflected in a shift of bank assets from government securities to commercial loans. Between the end of 1945 and the end of 1950, bank loans in Canadian currency increased from about 21 p.c. to 31 p.c. of total assets. There was, at the same time, a rapid growth in total assets, as the monetary authorities leaned to the side of relatively easy money conditions to stimulate the economy and to ward off the widely anticipated postwar recession. In the five years ended Dec. 31, 1950, total assets expanded from about \$7,300,000,000 to \$9,400,000,000, almost all of the increase being in Canadian assets.

It was not until the outbreak of the Korean War in June 1950 that the fear of inflation, arising from the heavy demands on Canadian resources, led to the adoption of restraining measures. Since then, the banks have experienced substantial changes in their credit-granting capacity, as the country's official monetary policy was adapted to meet changes in business conditions. Alternating periods of ease and restraint have been marked by periods of rapidly rising bank assets followed by levelling-off phases.



The Korean boom of 1950-51 was followed, after only a short pause, by the investment boom of 1953-54. Recession in 1954-55 was accompanied by an easy monetary policy, during which the banks built up their liquid assets in the form of government bonds. Then a second and greater investment boom got under way in late 1955, which carried the Canadian economy and the banking system into another period when resources were strained to the limit. At this time, new measures of restraint were introduced into the Canadian banking system by the monetary authorities, including an agreed secondary reserve ratio of 7 p.c. in addition to the cash reserves of 8 p.c. already prescribed in the Bank Act revision of 1954. A further agreement with the Bank of Canada was aimed at restraining term loans for capital purposes\* and in 1956 bank loans to instalment finance companies were also put under some restraint. The boom of 1955-57 was followed by a mild recession in 1957-58, moderate recovery in 1958-59, slackening in 1960 and recovery again in 1961-65. Over the period 1955-65, the banks had not regained the liquidity that characterized earlier postwar recessions, and there appeared an increasing need to husband resources carefully for the various and growing alternative outlets which developed as the result of economic growth, and of the efforts of both the Federal Government and the banks themselves to provide new uses for bank credit. In 1966 the Government introduced legislation which, when passed, would increase competition between banks and other financial institutions.†

One of the first government measures was the Farm Improvement Loans Act of 1944, under which the chartered banks were authorized to make loans to farmers for the purchase of equipment and livestock and for making various improvements to their farm buildings and facilities (see pp. 458-459). These loans are often for sizable amounts (an average of about \$1,500) and the terms have been gradually extended to a maximum sum of \$15,000 outstanding to any one borrower with a maximum period of ten years (four years for implements). The banks are guaranteed against loss up to 10 p.c. of their loans made during the three-year "lending periods", up to a maximum total of loans by all banks. This total is \$700,000,000 for the lending period to end in mid-1968. By the end of July 1966, the total amount of loans made under this Act was approximately \$1,855,600,000 and the amount outstanding was \$377,000,000.

The 1954 revision of the Bank Act introduced a major change in banking practice by enabling the banks to acquire mortgages issued under the National Housing Act. About 35 p.c. of all NHA mortgage loans in the years 1954-59 were made by the chartered banks, but at the end of 1959 the NHA interest rate was raised to 6½ p.c. and the banks withdrew from this field of lending. Notwithstanding this, by Dec. 31, 1966 they held some \$780,000,000 in NHA mortgages, representing about 4 p.c. of total assets. Another change affecting housing in the 1954 revision enabled the banks to make home improvement loans under a guarantee system rather similar to the one developed for farm improvement loans. By the end of 1965, home improvement loans amounting to more than \$383,700,000 had been approved and the banks had about \$73,200,000 of such loans on their books.

In November 1960, the Small Businesses Loans Act was passed guaranteeing, under terms to the banks similar to those of the Farm Improvement Loans Act, certain types of bank loan to small businesses for the purposes of making capital improvements to premises and equipment. This provides for loans that do not fall within the usual scope of bank lending to small business, by reason of the term nature of the loan together with the lack of collateral resources of the borrower. Of course, chartered banks make loans to small businesses for a great variety of purposes, including many of a medium-term character; indeed, the working capital loan to the small-size or medium-size industry or commercial enterprise is the traditional stock-in-trade business of the chartered banks.

In April 1961, the charter of the Export Finance Corporation of Canada Limited, which had been incorporated by special Act of Parliament in June 1959 for private in-

\* Such loans were almost entirely a postwar innovation in Canadian lending practice, and had increased markedly during the easy-money period of 1954-55. Since 1956, term lending has been generally confined within narrower limits, although it is still practised when conditions permit.

† See footnote ††, p. 1125.



terests, was acquired by the chartered banks. The principal purpose of the Corporation is to assist in the medium-term (one to five years) financing of exports which have been insured by the Export Credit Insurance Corporation, a Crown company.

Still another area of lending which has expanded greatly in recent years is that of consumer credit. Although the banks have always made some personal loans, they have recently moved aggressively into the field of lending to the general public for the purchase of automobiles, consumer durables and debt consolidation. Following the 1954 Bank Act revision, and partly as a result of the change then made which enabled the banks to take chattel mortgage security, some banks have developed extensive consumer credit divisions. Personal loans made by the banks, other than those secured by stocks and bonds and home improvement loans, mounted from \$420,000,000 at the end of 1957 to \$2,401,600,000 outstanding at Dec. 31, 1966.

Outside of Canada, the Canadian banks have continued to expand their branch systems in the Caribbean area (although the two Canadian banks operating in Cuba found it necessary to withdraw), in South America and in Europe. In recent years the growth of an international money market, following the economic recovery in Europe and the restoration of confidence in the stability of the Western economies and their currencies, has led to large movements of Western capital from one centre to another. The Canadian banks have participated extensively in this international money market, mainly through New York and London where most of them maintain large offices.

The postwar growth in bank assets has been accompanied by a substantial increase in total earnings. Earnings per share of capital employed did not increase to the same extent, however, as the banks found it necessary to raise new funds from time to time after 1950 in order to maintain an appropriate relationship between their shareholders' capital and the rapidly rising level of risk assets. The banks have been among the largest issuers of new share capital to Canadians in the past quarter-century.

**Branches of Chartered Banks.**—Although there are fewer chartered banks now than at the beginning of the century, there has been a great increase in the number of branch banking offices. As a result of amalgamations, the number of banks declined from 34 in 1901 to 10 in 1931, and remained at that figure until the incorporation of a new bank—The Mercantile Bank of Canada—in 1953 brought the total to 11. Since then the amalgamation in 1955 of The Bank of Toronto and The Dominion Bank as The Toronto-Dominion Bank, the amalgamation of Barclays Bank (Canada) with the Imperial Bank of Canada in 1956 and the amalgamation of the Canadian Bank of Commerce and the Imperial Bank of Canada as the Canadian Imperial Bank of Commerce on June 1, 1961 have reduced this number to eight.\* The number of branches of chartered banks in each province periodically from 1868 to 1966 is given in Table 8.

\* See footnote †, p. 1125.

#### 8.—Branches of Chartered Banks, by Province, as at Dec. 31 for Certain Years 1868-1966

NOTE.—Figures for 1920 and subsequent years include sub-agencies in Canada receiving deposits for the banks employing them; there were 753 such sub-agencies at Dec. 31, 1966.

Province or Territory	1868	1902	1905	1920	1926	1930	1940	1950	1960	1962	1963	1964	1965	1966
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	—	—	—	—	—	—	—	39	71	81	88	90	104	107
Prince Edward Island	—	9	10	41	28	28	25	23	27	27	26	26	29	29
Nova Scotia.....	5	89	101	169	134	138	134	144	173	178	180	183	189	189
New Brunswick.....	4	35	49	121	101	102	97	100	113	118	121	123	126	132
Quebec.....	12	137	196	1,150	1,072	1,183	1,083	1,164	1,427	1,489	1,515	1,539	1,580	1,604
Ontario.....	100	349	549	1,586	1,326	1,409	1,208	1,257	1,785	1,916	1,967	2,022	2,055	2,078
Manitoba.....	—	52	95	349	224	239	162	165	234	248	255	261	271	279
Saskatchewan.....	—	—	—	591	427	447	233	238	296	299	303	308	317	321
Alberta.....	—	30	87	424	269	304	172	246	394	417	431	445	457	462
British Columbia.....	2	46	55	242	186	229	192	294	514	545	546	563	580	588
Yukon and N.W.T.....	—	—	3	3	3	4	5	9	17	14	15	15	16	17
<b>Canada.....</b>	<b>123</b>	<b>747</b>	<b>1,145</b>	<b>4,676</b>	<b>3,770</b>	<b>4,083</b>	<b>3,311</b>	<b>3,679</b>	<b>5,051</b>	<b>5,332</b>	<b>5,447</b>	<b>5,575</b>	<b>5,724</b>	<b>5,806</b>

**9.—Branches of Individual Canadian Chartered Banks, by Province, as at Dec. 31, 1966**

NOTE.—This table includes 753 sub-agencies in Canada for receiving deposits.

Bank	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	No.	No.	No.	No.	No.	No.
Bank of Montreal.....	30	3	27	24	188	350
The Bank of Nova Scotia.....	43	8	52	41	66	282
Banque Canadienne Nationale.....	—	—	—	—	598	19
Banque Provinciale du Canada.....	—	2	—	18	325	23
Canadian Imperial Bank of Commerce.....	10	8	26	18	180	615
The Mercantile Bank of Canada.....	—	—	1	—	2	1
The Royal Bank of Canada.....	23	7	79	26	174	401
The Toronto-Dominion Bank.....	1	1	4	5	71	387
<b>Totals.....</b>	<b>107</b>	<b>29</b>	<b>189</b>	<b>132</b>	<b>1,604</b>	<b>2,078</b>
	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Total
	No.	No.	No.	No.	No.	No.
Bank of Montreal.....	61	64	106	131	4	988
The Bank of Nova Scotia.....	23	33	61	74	1	684
Banque Canadienne Nationale.....	4	—	—	—	—	621
Banque Provinciale du Canada.....	—	—	—	—	—	368
Canadian Imperial Bank of Commerce.....	69	93	141	194	9	1,363
The Mercantile Bank of Canada.....	1	—	1	1	—	7
The Royal Bank of Canada.....	79	91	92	121	3	1,096
The Toronto-Dominion Bank.....	42	40	61	67	—	679
<b>Totals.....</b>	<b>279</b>	<b>321</b>	<b>462</b>	<b>588</b>	<b>17</b>	<b>5,806</b>

**10.—Branches of Individual Canadian Chartered Banks Outside Canada, as at Dec. 31, 1966**

NOTE.—This table does not include sub-agencies operating outside Canada, of which there were 36 in 1966.

Bank and Location	Number	Bank and Location	Number	Bank and Location	Number
Bank of Montreal—		Canadian Imperial Bank		The Royal Bank of	
Britain.....	2	of Commerce—		Canada—concl.	
United States.....	3	Britain.....	2	Britain.....	2
France.....	2	United States.....	11	Guyana.....	6
Germany.....	5	Antigua.....	1	Haiti.....	1
		Bahamas.....	4	Jamaica.....	10
		Barbados.....	1	Peru.....	1
The Bank of		Cayman Islands.....	1	Puerto Rico.....	6
Nova Scotia—		Grenada.....	1	Trinidad and Tobago.....	12
Antigua.....	1	Jamaica.....	8	United States.....	1
Bahamas.....	5	St. Vincent.....	1	Venezuela.....	6
Grenada.....	1	Trinidad.....	5	West Indies.....	10
Trinidad.....	6				
Barbados.....	2				
Dominican Republic.....	3	The Royal Bank of		The Toronto-Dominion	
England.....	3	Canada—		Bank—	
Scotland.....	1	Argentina.....	2	Britain.....	2
Jamaica.....	24	Bahamas.....	5	United States.....	1
St. Lucia.....	1	Brazil.....	3		
Puerto Rico.....	3	British Honduras.....	4		
U.S. Virgin Islands.....	3	Cayman Islands.....	1	Banque Canadienne	
United States.....	1	Colombia.....	5	Nationale—	
Lebanon.....	1	Dominican Republic.....	10	France.....	1
Netherlands.....	1	France.....	1		
Ireland.....	1	French West Indies.....	2	<b>Total.....</b>	<b>196</b>

**Financial Statistics of the Chartered Banks.**—The classification of chartered bank assets and liabilities was revised by the Bank of Canada Act, 1954, so that the statistical series given in Tables 11–15 begins with that year. Assets and liabilities are given in less detail for 1954–61 in the 1965 Year Book, p. 1043 and corresponding figures to those in Table 11 for 1962 and 1963 in the 1966 edition, p. 1066; month-end data are available from Dec. 31, 1954 to date in the Bank of Canada *Statistical Summary*.

# 11.—Statement of Chartered Bank Assets and Liabilities, as at Dec. 31, 1964–66

Assets and Liabilities	1964	1965	1966
	\$'000	\$'000	\$'000
<b>Assets—</b>			
Gold and coin in Canada.....	41,361	59,217	53,171
Gold and coin outside Canada.....	1,121	1,621	1,573
Notes of and deposits with Bank of Canada.....	1,237,192	1,416,943	1,549,348
Government and bank notes other than Canadian.....	55,232	62,409	61,805
Deposits with other banks in Canadian currency.....	7,294	11,062	16,042
Deposits with other banks in currencies other than Canadian.....	1,597,118	1,383,632	1,516,166
Cheques and other items in transit (net).....	803,285	774,510	1,017,076
Government of Canada treasury bills, at amortized value.....	1,256,864	1,357,313	1,547,861
Other Government of Canada direct and guaranteed securities maturing within two years, at amortized value.....	1,125,879	954,725	864,413
Government of Canada direct and guaranteed securities maturing after two years, at amortized value.....	1,336,486	1,422,530	1,473,002
Canadian provincial government direct and guaranteed securities, at amortized value.....	372,191	338,231	279,866
Canadian municipal and school corporation securities, not exceeding market value.....	307,347	331,214	320,570
Other Canadian securities, not exceeding market value.....	486,772	521,361	548,585
Securities other than Canadian, not exceeding market value.....	586,750	633,031	613,719
Mortgages and hypothecs insured under the National Housing Act 1954..	850,977	815,056	782,584
Day-to-day, call and short loans to investment dealers and brokers in Canadian currency, secured.....	403,828	459,053	563,061
Day-to-day, call and short loans to investment dealers and brokers in currencies other than Canadian, secured.....	1,017,254	716,643	873,566
Loans to Canadian provincial governments in Canadian currency.....	30,188	59,362	101,402
Loans to Canadian municipalities and school corporations in Canadian currency, less provision for estimated loss.....	362,589	521,221	613,977
Other current loans in Canadian currency, less provision for estimated loss.....	8,866,087	10,488,498	11,131,617
Other current loans in currencies other than Canadian, less provision for estimated loss.....	2,010,859	2,239,777	2,566,880
Non-current loans, less provision for estimated loss.....	1,441	1,490	1,564
Bank premises at cost, less amounts written off.....	315,454	311,613	315,110
Shares of and loans to corporations controlled by the bank.....	70,163	86,914	99,197
Customers' liability under acceptances, guarantees and letters of credit, as per contra.....	722,393	899,617	847,864
Other assets.....	5,817	7,739	13,403
<b>Totals, Assets.....</b>	<b>23,871,932</b>	<b>25,874,782</b>	<b>27,773,422</b>
<b>Liabilities—</b>			
Deposits by Government of Canada in Canadian currency.....	696,315	796,757	919,025
Deposits by Canadian provincial governments in Canadian currency.....	201,554	343,806	302,761
Deposits by other banks in Canadian currency.....	182,898	197,693	207,105
Deposits by other banks in currencies other than Canadian.....	930,627	1,260,056	1,271,010
Personal savings deposits payable after notice, in Canada, in Canadian currency.....	8,934,586	9,725,322	10,248,112
Other deposits payable after notice, in Canadian currency.....	1,505,377	2,043,359	2,345,663
Other deposits payable on demand, in Canadian currency.....	5,176,120	5,486,421	5,993,701
Other deposits in currencies other than Canadian.....	4,280,801	3,822,489	4,297,211
Acceptances, guarantees and letters of credit.....	722,393	899,617	847,864
Other liabilities.....	66,472	63,443	75,558
Capital paid up.....	281,958	285,958	285,958
Reserve account.....	881,300	936,000	963,700
Undivided profits at latest fiscal year-end.....	11,531	13,361	15,754
<b>Totals, Liabilities.....</b>	<b>23,871,932</b>	<b>25,874,782</b>	<b>27,773,422</b>



**12.—Canadian Cash Reserves, 1957-66**

NOTE.—Bank of Canada deposits are averages of the juridical days in the month shown; Bank of Canada notes and Canadian dollar deposits are averages of the four consecutive Wednesdays ending with the second last Wednesday in the previous month.

(Millions of dollars)

Year	Cash Reserves			Canadian Dollar Deposit Liabilities	Average Cash Reserve Ratio
	Bank of Canada Deposits	Bank of Canada Notes	Total		
1957.....	535	335	870	10,601	8.2
1958.....	607	336	943	11,452	8.2
1959.....	648	351	999	12,187	8.2
1960.....	625	360	985	12,052	8.2
1961.....	673	367	1,040	12,804	8.1
1962.....	748	376	1,124	13,812	8.1
1963.....	775	394	1,169	14,400	8.1
1964.....	857	407	1,263	15,598	8.1
1965.....	965	427	1,392	17,186	8.1
1966.....	1,057	449	1,506	18,604	8.1

**13.—Classification of Chartered Bank Deposit Liabilities Payable to the Public in Canada in Canadian Currency, as at Sept. 30, 1965 and 1966**

Deposit Accounts of the Public of—	1965			1966		
	Personal Savings Deposit Accounts	Other Deposit Accounts of the Public	Total Deposit Accounts of the Public	Personal Savings Deposit Accounts	Other Deposit Accounts of the Public	Total Deposit Accounts of the Public
	No.	No.	No.	No.	No.	No.
Less than \$100.....	6,864,876	1,538,247	8,403,123	7,158,103	1,560,210	8,718,313
\$100 or over but less than \$1,000.....	3,759,330	1,118,423	4,877,753	3,993,666	1,199,303	5,192,969
\$1,000 or over but less than \$10,000...	1,990,806	440,437	2,431,243	2,132,781	478,727	2,611,508
\$10,000 or over but less than \$100,000	123,077	81,951	205,028	134,632	91,865	226,497
\$100,000 or over.....	1,359	9,723	11,082	1,936	9,532	11,468
<b>Totals, Deposits.....</b>	<b>12,739,448</b>	<b>3,188,781</b>	<b>15,928,229</b>	<b>13,421,118</b>	<b>3,339,637</b>	<b>16,760,755</b>

**14.—Classification of Chartered Bank Loans in Canadian Currency, as at Dec. 31, 1964-66**

Class of Loan	1964	1965	1966
	\$'000,000	\$'000,000	\$'000,000
<b>General Loans—</b>			
Personal.....	2,323.1	2,801.4	2,986.9
To individuals, fully secured by marketable bonds and stocks.....	468.5	541.9	609.5
Home improvement loans.....	72.0	75.4	75.8
To individuals, not elsewhere classified.....	1,792.6	2,186.0	2,401.6
<b>Farmers—</b>			
Farm Improvement Loans Act.....	274.8	344.2	399.1
Other farm loans.....	433.0	459.5	494.7
<b>Industry.....</b>	<b>1,764.4</b>	<b>2,010.2</b>	<b>2,491.4</b>
Chemical and rubber products.....	68.4	88.2	149.3
Electrical apparatus and supplies.....	84.7	109.5	166.8
Food, beverages and tobacco.....	290.4	567.6	465.0
Forest products.....	299.5	278.2	298.8
Furniture.....	36.9	41.9	43.8
Iron and steel products.....	261.1	287.0	353.6
Mining and mine products.....	127.6	141.0	161.4
Petroleum and products.....	186.4	176.3	186.6
Textiles, leather and clothing.....	222.9	242.7	293.1
Transportation equipment.....	119.8	117.5	194.9
Other products.....	136.6	160.3	180.1

**14.—Classification of Chartered Bank Loans in Canadian Currency, as at  
Dec. 31, 1964-66—concluded**

Class of Loan	1964	1965	1966
	\$'000,000	\$'000,000	\$'000,000
<b>General Loans—concluded</b>			
Merchandisers.....	1,139.0	1,248.3	1,235.2
Construction contractors.....	455.9	493.6	450.5
Public utilities, transportation and communications.....	248.4	275.2	345.4
Other business.....	1,321.5	1,599.3	1,499.6
Religious, educational, health and welfare institutions.....	262.1	284.8	313.5
<b>Totals, General Loans.....</b>	<b>8,222.3</b>	<b>9,516.7</b>	<b>10,216.2</b>
<b>Other Loans—</b>			
Provincial governments.....	30.2	59.4	101.4
Municipal governments and school districts.....	362.6	521.2	614.0
Stockbrokers.....	61.3	79.1	100.7
Investment dealers.....	89.4	129.2	184.1
Loans to finance the purchase of Canada Savings Bonds.....	198.4	200.5	227.6
Grain dealers and exporters.....	148.0	246.0	265.6
Instalment and other finance companies.....	298.8	526.8	423.8
<b>Totals, Other Loans.....</b>	<b>1,188.7</b>	<b>1,762.1</b>	<b>1,917.2</b>
<b>Grand Totals, Loans in Canadian Currency.....</b>	<b>9,411.0</b>	<b>11,278.8</b>	<b>12,133.3</b>

**15.—Chartered Bank Earnings, Expenses and Additions to Shareholders' Equity,  
Fiscal Years Ended in 1964-66**

NOTE.—In 1964 and 1965 the financial years of five banks ended on Oct. 31, two on Nov. 30 and one on Sept. 30; in 1966 all banks ended their financial year on Oct. 31.

Item	1964	1965	1966
	\$'000,000	\$'000,000	\$'000,000
<b>Current Operating Earnings—</b>			
Interest and discount on loans.....	745.1	844.1	991.3
Interest, dividends and trading profits on securities <sup>1</sup> .....	252.2	259.4	265.6
Exchange, commission, service charges and other current operating earnings.....	187.4	202.5	238.9
<b>Totals, Current Operating Earnings.....</b>	<b>1,184.7</b>	<b>1,306.0</b>	<b>1,495.8</b>
<b>Current Operating Expenses—<sup>2</sup></b>			
Interest on deposits.....	456.4	524.7	630.8
Remuneration to employees.....	294.2	311.9	350.6
Contributions to pension funds.....	13.3	14.1	15.1
Provision for depreciation of bank premises.....	24.9	25.1	26.3
Other current operating expenses <sup>3</sup> .....	159.8	172.1	199.0
<b>Totals, Current Operating Expenses<sup>2</sup>.....</b>	<b>948.6</b>	<b>1,047.9</b>	<b>1,221.8</b>
<b>Net current operating earnings<sup>2</sup>.....</b>	<b>236.1</b>	<b>258.1</b>	<b>274.0</b>
Capital profits and non-recurring items <sup>4</sup> .....	2.8	0.9	-4.6
Less provision for losses and addition to inner reserves, net <sup>5</sup> .....	58.7	44.7	65.2
Less provision for income taxes <sup>6</sup> .....	92.2	91.6	102.7
<b>Leaving for dividends and shareholders' equity.....</b>	<b>88.0</b>	<b>122.7</b>	<b>101.5</b>
<b>Dividends to shareholders.....</b>	<b>64.9</b>	<b>67.2</b>	<b>71.4</b>
<b>Additions to shareholders' equity.....</b>	<b>23.1</b>	<b>55.5</b>	<b>30.1</b>
<b>ADDITIONS TO SHAREHOLDERS' EQUITY</b>			
<b>Undivided Profits—</b>			
From operating earnings, net after transfers to rest account.....	4.4	1.8	2.4
<b>Rest Account—</b>			
From operating earnings and undivided profits.....	18.7	22.7	27.7
From retransfers from inner reserves.....	—	31.0	—
From premium on new shares.....	0.2	1.0	—
<b>Capital Paid Up—</b>			
From issue of new shares.....	0.1	4.0	—
<b>NET ADDITIONS TO SHAREHOLDERS' EQUITY.....</b>	<b>23.3</b>	<b>60.5</b>	<b>30.1</b>

<sup>1</sup> Realized profits and losses on disposal of securities are included in operating earnings. <sup>2</sup> Before provision for income taxes, losses, and transfers to inner reserves. <sup>3</sup> Includes taxes other than income taxes. <sup>4</sup> Profits and losses on sale of fixed assets and adjustments relating to prior years. <sup>5</sup> After amounts retransferred to rest account. <sup>6</sup> Includes income taxes on taxable portion of additions to and amounts retransferred from inner reserves, and foreign income taxes.

**Cheque Payments.**—A monthly record of the value of cheques charged to customer accounts at all chartered bank offices in the major clearing-house centres of Canada is available from 1924. During the past twenty years the value of cheques cleared in these centres has increased steadily at an average of over 9 p.c. a year. Clearing centres in British Columbia showed the highest rate of increase during that period, followed closely by Quebec and Ontario.

The value of cheques cashed in the 35 major clearing centres in 1965 reached a record high of \$476,000,000, an increase of 14.1 p.c. over 1964. All but one of the reporting centres recorded increases. London, Ont., reported the largest increase at 22.5 p.c., Halifax, N.S., increased by 20.7 p.c., Saskatoon, Sask., by 18.2 p.c. and Vancouver, B.C., by 16.2 p.c. Toronto, which accounted for 37.5 p.c. of the total value of cheques cleared, rose by 14.9 p.c. and Montreal by 14.1 p.c.

#### 16.—Cheques Cashed at 35 Clearing-House Centres, 1964 and 1965

Clearing-House Centre	1964	1965	Clearing-House Centre	1964	1965
	\$'000	\$'000		\$'000	\$'000
<b>Atlantic Provinces</b> .....	<b>8,301,199</b>	<b>9,667,242</b>	<b>Ontario—concluded</b>		
Halifax.....	3,852,641	4,649,283	Sudbury.....	838,983	973,684
Moncton.....	887,873	1,035,278	Toronto.....	155,418,798	178,642,251
Saint John.....	1,706,178	1,835,482	Windsor.....	3,531,255	4,234,667
St. John's.....	1,854,507	2,147,199			
<b>Quebec</b> .....	<b>126,978,357</b>	<b>144,586,126</b>	<b>Prairie Provinces</b> .....	<b>61,044,062</b>	<b>68,303,393</b>
Montreal.....	116,379,368	132,793,252	Brandon.....	328,967	322,078
Quebec.....	9,564,067	10,599,128	Calgary.....	14,070,305	15,495,880
Sherbrooke.....	1,034,922	1,193,746	Edmonton.....	10,541,712	11,937,495
<b>Ontario</b> .....	<b>191,639,223</b>	<b>219,777,367</b>	Lethbridge.....	643,859	695,785
Brantford.....	921,946	1,037,147	Medicine Hat.....	309,689	323,256
Chatham.....	868,547	932,891	Moose Jaw.....	441,559	475,891
Cornwall.....	609,142	684,950	Prince Albert.....	275,287	296,308
Fort William.....	583,174	678,252	Regina.....	5,926,437	6,323,104
Hamilton.....	8,570,766	9,968,268	Saskatoon.....	1,551,490	1,834,178
Kingston.....	809,636	940,493	Winnipeg.....	26,954,757	30,599,418
Kitchener.....	2,008,150	2,322,531	<b>British Columbia</b> .....	<b>29,372,078</b>	<b>33,646,743</b>
London.....	5,763,605	7,062,318	New Westminster.....	25,239,274	29,323,153
Ottawa.....	8,601,107	8,687,423	Vancouver.....	4,132,804	4,323,590
Peterborough.....	850,500	927,069	Victoria.....		
St. Catharines.....	1,504,844	1,796,657			
Sarnia.....	760,770	888,766	<b>Totals</b> .....	<b>417,334,919</b>	<b>475,980,871</b>

#### Subsection 4.—Government and Other Banking Institutions

There are three distinct types of savings banks in Canada in addition to the savings departments of the chartered banks and of trust and loan companies: (1) the Post Office Savings Bank, in which deposits are a direct obligation of the Government of Canada; (2) Provincial Government savings banking institutions in Ontario and Alberta, where the depositor becomes a direct creditor of the province; and (3) two important savings banks in the Province of Quebec—the Montreal City and District Savings Bank and La Banque d'Économie de Québec—established under federal legislation and reporting monthly to the federal Department of Finance. In addition, co-operative credit unions encourage savings among low-income classes and extend small loans to their members.

**Post Office Savings Bank.**—The Post Office Savings Bank was established under the Post Office Act of 1867 (SC 1867, c. 10) to "enlarge the facilities now available for the deposit of small savings, to make the Post Office available for that purpose, and to give the direct security of the nation to every depositor for repayment of all money deposited by him together with the interest due thereon". Branches of the Government of Canada's Savings Bank under the Department of Finance were gradually amalgamated with this



Bank over a period of 50 years and the amalgamation was completed in March 1929. Summary financial statistics for the years ended Mar. 31, 1963-66 follow.

<i>Item</i>	<i>1963</i>	<i>1964</i>	<i>1965</i>	<i>1966</i>
	\$	\$	\$	\$
Deposits and interest.....	5,714,720	5,422,181	4,862,529	4,542,467
Deposits .....	5,072,613	4,813,401	4,283,950	3,995,127
Interest on deposits.....	642,107	608,779	578,579	547,340
Withdrawals.....	7,199,360	6,697,740	6,212,491	5,773,495
Balance on deposit.....	25,880,479	24,604,919	23,254,957	22,023,929

**Provincial Government Savings Institutions.**—Institutions for the deposit of savings are operated by the Provincial Governments of Ontario and Alberta.

*Ontario.*—The establishment of the Province of Ontario Savings Office was authorized by the Ontario Legislature at the 1921 Session and the first branches were opened in March 1922. Interest at the rate of 3 p.c. per annum, compounded half-yearly, is paid on accounts, and deposits are repayable on demand. Total deposits as of Mar. 31, 1966 were \$81,600,000 and the number of depositors was approximately 92,000; 21 branches are in operation throughout the province.

*Alberta.*—Savings deposits are accepted at 63 Province of Alberta Treasury Branches throughout the province. The total of these deposits at Mar. 31, 1966 was \$84,159,852, of which \$52,130,105 was payable on demand bearing interest at 3½ p.c. per annum, \$15,936,618 was in term savings for terms of from one to five years, bearing interest at 4 p.c. to 5½ p.c. per annum depending on the term, and \$16,093,128 was in term deposit receipts for terms of from 30 days to 365 days, bearing interest at rates comparable to those paid on the open market.

**Quebec Savings Banks.**—The Montreal City and District Savings Bank, founded in 1846 and now operating under a charter of 1871 had, at Oct. 31, 1966, a paid-up capital and reserve of \$16,500,000, savings deposits of \$374,342,592, and total liabilities of \$393,942,115. Total assets amounted to \$393,942,115, including \$108,727,179 of federal, provincial, municipal and other securities.

La Banque d'Économie de Québec, founded in 1848 (as La Caisse d'Économie de Notre-Dame de Québec) under the auspices of the St. Vincent de Paul Society, incorporated by Act of the Canadian Legislature in 1855 and given a federal charter by SC 1871, c. 7, had, at Mar. 31, 1966, savings deposits of \$53,667,156 and a paid-up capital and reserve of \$3,500,000. Total liabilities amounted to \$60,459,860 and total assets to a like amount.

**Credit Unions.**—Credit unions are savings and loan associations organized and operated on a co-operative basis by people having a common bond of association such as a parish, club, lodge or labour union, that of employment in a plant, industry or department, or residence in a rural or well-defined urban community. The number of chartered credit unions in Canada at the end of 1965 was 4,939 of which 4,364 reported a total membership of 3,700,000 and assets of \$2,500,000,000. Quebec, with 2,000,000 members and assets of \$1,400,000,000, accounted for 55 p.c. of both total membership and total assets of all credit unions in Canada. Credit unions classified by bond of association on a percentage basis were: occupational 35, rural 33, urban 17 and other 15. The number of rural associations has been declining over the past several years.

Canadian credit unions in the 1956-65 decade have continued the steady growth generally in evidence since credit unions were first organized in Quebec in the early part of the present century. Loans granted by credit unions increased by 17 p.c. in 1965 to reach \$1,078,000,000, passing the \$1,000,000,000-mark for the first time and being a 248-p.c. increase over the corresponding figure of \$310,000,000 in 1956. Assets at \$2,500,000,000 increased by 234 p.c. and savings at \$2,300,000,000 increased by 225 p.c. in the same comparison. Membership of 3,700,000 represented 18.6 p.c. of the total population, compared with 1,900,000 and 11.6 p.c., respectively, in 1956.

There were 28 central credit unions in 1965; these unions act as credit unions for the credit unions, mainly by accepting deposits of surplus funds from them and providing a source of funds for them to borrow when they cannot meet the demand for local loans. Most of the centrals also admit co-operatives as members. Total assets of the centrals increased 18 p.c. to \$357,000,000 and loans to members increased 43 p.c. to \$221,000,000 over the previous year. The Canadian Co-operative Credit Society serves as a central credit union for the provincial centrals and large co-operatives all across Canada. In 1965, membership consisted of four provincial centrals, four commercial co-operatives and two co-operative insurance companies. At Dec. 31, 1965, the Society had assets of \$1,200,000, loans outstanding of \$850,000 and member deposits of \$650,000.

### 17.—Credit Unions in Canada, 1956-65

Year	Credit Unions Chartered	Credit Unions Reporting	Members <sup>1</sup>	Assets <sup>1</sup>	Loans Granted to Members
	No.	No.	No.	\$'000	\$'000
1956 .....	4,258	3,977	1,870,277	761,256	309,683
1957 .....	4,349	4,044	2,059,835	852,219	344,791
1958 .....	4,485	4,156	2,187,494	1,009,363	391,084
1959 .....	4,570	4,202	2,360,047	1,157,995	472,688
1960 .....	4,608	4,345	2,553,951	1,314,290	481,192
1961 .....	4,682	4,348	2,740,251	1,506,167	578,663
1962 .....	4,760	4,323	2,879,179	1,673,835	676,312
1963 .....	4,809	4,356	3,123,735	1,920,341	771,700
1964 .....	4,870	4,362	3,418,033	2,212,690	918,600
1965 .....	4,939	4,364	3,677,291	2,541,791	1,078,139

<sup>1</sup> Reporting organizations only.

### 18.—Summary Statistics of Credit Unions, by Province, 1965

Province	Credit Unions Chartered	Credit Unions Reporting	Members	Assets	Shares	Deposits	Loans Granted to Members
	No.	No.	No.	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	65	35	3,663	730	561	53	710
Prince Edward Island.....	38	35	9,008	2,709	2,174	91	1,666
Nova Scotia.....	186	178	84,718	29,650	22,767	1,354	25,293
New Brunswick.....	163	163	95,874	27,480	24,107	426	11,800
Quebec.....	1,659	1,530	2,006,526	1,393,512	186,912	1,115,559	418,200
Ontario.....	1,645	1,299	732,872	491,899	321,694	95,533	298,212
Manitoba.....	268	256	144,641	104,900	73,771	14,880	65,672
Saskatchewan.....	301	295	236,338	257,240	180,055	40,473	129,066
Alberta.....	311	298	115,104	63,880	49,475	5,501	38,610
British Columbia.....	303	275	248,547	169,791	117,583	22,419	88,910
<b>Totals.....</b>	<b>4,939</b>	<b>4,364</b>	<b>3,677,291</b>	<b>2,541,791</b>	<b>979,099</b>	<b>1,296,289</b>	<b>1,078,139</b>

## Section 2.—Other Commercial Finance

### Subsection 1.—Trust and Mortgage Loan Companies\*

Trust and mortgage loan companies are registered with either the federal or provincial governments. They operate under the Loan and Trust Companies Acts (RSC 1952, c. 170 as amended by SC 1953 c. 5, SC 1958 c. 35, SC 1961 c. 51, and SC 1964-65 c. 40; RSC 1952 c. 272 as amended by SC 1953 c. 10, SC 1958 c. 42, SC 1961 c. 55 and SC 1964-65 c. 40, respectively) or under corresponding provincial legislation.

\* Prepared by the Research Department of the Bank of Canada in co-operation with the Superintendent of Insurance for Canada.

The first mortgage loan companies were established in Ontario in the 1840s as co-operative associations to provide mortgage finance for their members. These associations evolved under legislation which was amended to give them permanent corporate status as mortgage lending institutions. They obtained their funds principally by selling medium- and long-term debentures to the public but also had the power to open deposit accounts. Trust companies were first incorporated in Ontario in the 1880s. Although the trust company legislation prevented them from borrowing funds, they had the power to accept funds in guaranteed trust accounts and invest them in specified types of assets. This feature of trust company legislation is now general throughout Canada. Although it does set up a trust rather than creditor relationship between trust companies and the holders of their certificates and deposits, the trust companies operate as financial intermediaries in the same way as mortgage loan companies, chartered banks or savings and other financial institutions. A more important special characteristic of trust companies is that they are the only corporations in Canada with power to act as trustees for property interests and to conduct other fiduciary business. In this capacity they act as executors, trustees and administrators under wills or by appointment, as trustees under marriage or other settlements, as agents in the management of estates of the living, as guardians of minor or incapable persons, as financial agents for municipalities and companies, as transfer agents and registrars for stock and bond issues, as trustees for bond issues and, where so appointed, as authorized trustees in bankruptcies.

Mortgage loan and trust companies were established and grew rapidly under provincial legislation in the late nineteenth and early twentieth centuries. Some companies were chartered by special Acts of Parliament but it was not until 1914 that federal legislation was passed and the Federal Government began to regulate trust and loan companies registered under its Acts. There are now eight federal trust companies and 13 federal loan companies. The Superintendent of Insurance examines these companies and also, by arrangement with the provinces, trust and loan companies incorporated in Nova Scotia, and trust companies incorporated in New Brunswick and Manitoba. Companies must be licensed by each province in which they wish to operate.

Although there are many differences among the various federal and provincial Acts, the broad lines of the legislation are common. In their intermediary business the companies have the powers mentioned above to borrow or, in the case of trust companies, accept funds in guaranteed accounts subject to maximum permitted ratios of these funds to shareholders' equity. The funds may be invested in specified assets which include first mortgages on real property, government securities and the bonds and equity of corporations having established earnings records. The companies may grant loans on the security of such bonds and stocks but may not make unsecured commercial and personal loans. Trust and loan companies are not required to hold specified cash reserves, as are the chartered and savings banks, but there are broadly defined "liquid asset" requirements in a number of the Acts. The investment powers of federal companies were broadened in 1965, when the maximum permitted value of conventional mortgage loans was raised from 66 $\frac{2}{3}$  p.c. to 75 p.c. of the appraised value of the property, the limit on common stock holdings was raised from 15 p.c. to 25 p.c. of total assets and the quality tests for common stocks eligible for investment were relaxed.

The trust and mortgage loan companies have been substantial members of the Canadian financial system since their early years. In the 1920s they held about one half of the private mortgage business in Canada but during the 1930s and World War II their growth rate fell off sharply because of the impact of the depression of the 1930s and World War II on the mortgage business. In the years since the War the re-emergence of strong demands for mortgage financing and the willingness of many trust and loan companies to compete aggressively for funds have led to sustained rapid expansion. These developments may be traced in the annual statistics published by the Superintendent of Insurance and provincial authorities, and in the quarterly balance sheet data compiled by the Dominion Bureau of Statistics.



According to the DBS figures, the mortgage loan companies had assets before investment in subsidiaries of \$2,216,000,000 at the end of 1965 compared with \$1,886,000,000 a year earlier. Their holdings of mortgages amounted to \$1,817,000,000 or 82 p.c. of total assets. To finance their investments, these companies had borrowed \$1,365,000,000 or 62 p.c. of their total funds by the sale of debentures and \$366,000,000 from deposit accounts.

At the end of 1965, the "intermediary" assets of trust companies in the DBS survey were \$3,422,000,000 compared with \$2,860,000,000 a year earlier, for an increase of 20 p.c. In addition, the companies had a total of \$12,588,000,000, at book values, under administration in estate, trust and agency accounts on Dec. 31, 1965.\* Trust companies, while not specializing in mortgage financing to the same extent as loan companies, in recent years have been putting a high proportion of their funds into these investments with the result that mortgages were 51 p.c. of their assets at the end of 1965 compared with 35 p.c. five years earlier. The trust companies had \$1,973,000,000 of term certificates outstanding and \$1,119,000,000 in deposit accounts in December 1965, accounting for over 90 p.c. of total funds. About one half of the deposits were in chequable accounts. There is considerable variety among the trust companies and a few have developed a substantial short-term business, raising funds by issuing certificates for terms as short as thirty days and also operating as lenders in the money market. Nevertheless, it remains true that the main business of the trust companies in their intermediary role, as of the mortgage loan companies, is to channel savings into mortgages and other long-term investments.

More complete and up-to-date financial information may be found in quarterly balance sheet statements published by the Dominion Bureau of Statistics and the Bank of Canada, the reports of the Superintendent of Insurance on Loan and Trust Companies, the reports of provincial supervisory authorities and in the Report of the Royal Commission on Banking and Finance as well as submissions and evidence put before the Commission. The annual figures given in Tables 19-22 are from the Department of Insurance report.

\* Department of Insurance figure.

### 19.—Operations of Provincial and Federal Loan and Trust Companies, as at Dec. 31, 1964 and 1965

Item	1964			1965		
	Provincial Companies	Federal Companies	Total	Provincial Companies	Federal Companies	Total
	\$	\$	\$	\$	\$	\$
<b>Loan Companies—</b>						
Assets (book values).....	456,793,428	980,794,295	1,437,587,723	568,253,970	1,124,663,414	1,692,917,384
Liabilities to the public.....	367,671,320	889,272,259	1,256,943,579	473,155,125	1,017,301,322	1,490,456,447
Capital paid up.....	41,524,959	37,610,908	79,135,865	44,558,696	40,345,920	84,904,616
Reserve and contingency funds..	38,378,679	52,104,555	90,483,234	41,574,505	64,316,956	105,891,461
Surplus.....	9,218,470	1,806,575	11,025,045	8,965,644	2,699,216	11,664,860
Total liabilities to shareholders	89,122,108	91,522,036	180,644,144	95,098,845	107,362,092	202,460,937
Gross profits realized during year <sup>1</sup> .....	8,382,588	12,159,622	20,542,210	8,949,284	14,168,584	23,117,868
<b>Trust Companies—</b>						
Assets (book values)—						
Company funds.....	200,303,367	97,712,777	298,016,144	204,768,769	106,112,516	310,881,285
Guaranteed funds.....	1,642,678,032	967,843,662	2,610,521,694	2,039,499,564	1,132,113,512	3,171,613,076
Totals, Assets.....	1,842,981,399	1,065,556,439	2,908,537,838	2,244,268,333	1,238,226,028	3,482,494,361
Estates, trust, and agency funds	8,542,766,048	2,728,744,451	11,271,510,499	9,419,621,484	3,168,647,670	12,588,269,154
Capital paid up.....	60,876,093	30,805,690	91,681,783	65,504,315	32,105,960	97,610,275
Reserve and contingency funds..	93,464,883	58,231,889	151,696,772	102,664,506	64,475,043	167,139,549
Surplus.....	11,014,401	3,154,613	14,169,014	10,866,649	3,461,325	14,327,974
Gross profits realized during year <sup>1</sup> .....	19,598,920	13,937,990	33,536,910	20,359,714	14,232,586	34,592,300

<sup>1</sup> Profits before income taxes.

**20.—Assets and Liabilities of Loan Companies, 1961-65**

Item	CHARTERED BY GOVERNMENT OF CANADA <sup>1</sup>				
	1961	1962	1963	1964	1965
	\$	\$	\$	\$	\$
<b>Assets</b>					
Real estate <sup>2</sup> .....	11,315,716	13,507,438	15,616,341	16,380,062	18,288,365
Mortgages and agreements of sale.....	425,789,259	506,731,590	597,175,335	754,192,719	883,173,559
Collateral loans.....	1,434,676	6,901,896	2,627,559	1,405,009	9,334,381
Bonds.....	79,903,391	85,566,281	98,406,751	113,407,076	107,925,769
Stocks.....	29,313,096	30,317,279	37,728,286	38,586,718	42,310,613
Cash.....	9,881,139	12,301,988	11,588,055	40,475,528	40,030,753
<b>Totals, Assets<sup>3</sup>.....</b>	<b>566,511,576</b>	<b>669,516,472</b>	<b>775,562,275</b>	<b>989,794,295</b>	<b>1,124,663,414</b>
<b>Liabilities</b>					
Liabilities to Shareholders—					
Capital paid up.....	20,410,770	23,048,264	28,389,518	37,610,906	40,345,920
Reserves.....	38,914,179	42,616,400	48,619,146	52,104,555	64,316,956
<b>Totals, Liabilities to Shareholders<sup>4</sup>..</b>	<b>60,183,500</b>	<b>66,552,229</b>	<b>78,812,090</b>	<b>91,522,036</b>	<b>107,362,092</b>
Liabilities to the Public—					
Debentures.....	322,937,934	389,158,825	429,423,571	523,181,987	595,881,987
Deposits.....	168,310,007	194,904,131	245,513,963	292,504,152	325,916,001
<b>Totals, Liabilities to the Public<sup>5</sup>....</b>	<b>506,328,076</b>	<b>602,964,243</b>	<b>696,750,185</b>	<b>889,272,259</b>	<b>1,017,301,322</b>
<b>Totals, Liabilities.....</b>	<b>566,511,576</b>	<b>669,516,472</b>	<b>775,562,275</b>	<b>989,794,295</b>	<b>1,124,663,414</b>
CHARTERED BY PROVINCES <sup>6</sup>					
	1961	1962	1963	1964	1965
	\$	\$	\$	\$	\$
<b>Assets</b>					
Real estate <sup>2</sup> .....	2,694,255	4,573,968	7,780,705	8,100,233	9,376,364
Mortgages and agreements of sale.....	169,461,984	215,572,171	288,022,912	374,947,355	490,071,451
Collateral loans.....	1,448,931	3,962,675	4,355,628	8,826,832	4,780,434
Bonds.....	9,766,188	9,641,413	11,667,357	24,987,476	22,385,581
Stocks.....	12,550,584	15,655,484	7,686,851	16,358,795	17,567,166
Cash.....	5,342,941	3,464,197	2,308,357	11,371,997	4,177,900
<b>Totals, Assets<sup>3</sup>.....</b>	<b>205,483,633</b>	<b>256,439,854</b>	<b>337,274,251</b>	<b>456,793,428</b>	<b>568,253,970</b>
<b>Liabilities</b>					
Liabilities to Shareholders—					
Capital paid up.....	23,158,009	25,226,797	32,146,664	41,524,959	44,558,696
Reserves.....	29,986,605	31,980,414	35,809,232	38,378,679	41,574,505
<b>Totals, Liabilities to Shareholders<sup>4</sup>..</b>	<b>59,423,407</b>	<b>64,150,564</b>	<b>73,992,823</b>	<b>89,122,108</b>	<b>95,098,845</b>
Liabilities to the Public—					
Debentures.....	119,196,291	141,210,394	186,695,904	243,435,057	322,473,711
Deposits.....	18,109,616	36,113,215	46,686,198	65,405,124	69,552,232
<b>Totals, Liabilities to the Public<sup>5</sup>....</b>	<b>146,060,226</b>	<b>192,289,290</b>	<b>263,281,428</b>	<b>367,671,320</b>	<b>473,155,125</b>
<b>Totals, Liabilities.....</b>	<b>205,483,633</b>	<b>256,439,854</b>	<b>337,274,251</b>	<b>456,793,428</b>	<b>568,253,970</b>

<sup>1</sup> Includes companies chartered by the Government of Nova Scotia which, by arrangement, are inspected by the federal Department of Insurance. <sup>2</sup> Book value of real estate for company use and other real estate.

<sup>3</sup> Includes interest due and accrued and other assets. <sup>4</sup> Includes surplus. <sup>5</sup> Includes other liabilities to the public. <sup>6</sup> Exclusive of Nova Scotia.

## 21.—Assets and Liabilities of Trust Companies, 1961-65

Item	CHARTERED BY GOVERNMENT OF CANADA <sup>1</sup>				
	1961	1962	1963	1964	1965
	\$	\$	\$	\$	\$
<b>Assets</b>					
<b>Company Funds<sup>2,3</sup></b>	<b>59,858,136</b>	<b>72,443,013</b>	<b>81,472,495</b>	<b>97,712,777</b>	<b>106,112,516</b>
Real estate <sup>4</sup>	7,334,471	7,980,688	10,604,841	13,119,738	13,055,759
Mortgages and agreements of sale	9,398,702	11,355,243	13,792,420	17,413,859	15,939,562
Collateral loans	676,996	750,375	621,097	1,188,356	1,045,889
Bonds	25,475,554	29,969,972	32,818,447	44,152,404	43,677,927
Stocks	9,615,703	13,039,069	15,588,351	13,231,610	19,453,909
Cash	5,537,837	6,128,310	5,487,172	5,923,372	8,741,852
<b>Guaranteed Funds<sup>2,3</sup></b>	<b>519,401,875</b>	<b>632,659,981</b>	<b>798,722,300</b>	<b>967,843,662</b>	<b>1,132,113,512</b>
Mortgages and agreements of sale	278,153,089	383,434,559	491,831,983	619,665,772	775,470,113
Collateral loans	11,556,406	12,327,614	13,531,204	14,585,851	6,468,738
Bonds	210,620,896	218,251,215	270,697,869	303,672,954	325,893,504
Stocks	4,426,981	4,178,170	1,614,009	3,703,501	299,897
Cash	9,583,905	8,186,938	13,413,319	16,867,182	12,336,360
<b>Liabilities</b>					
<b>Company Funds<sup>5</sup></b>	<b>59,858,136</b>	<b>72,443,013</b>	<b>81,472,495</b>	<b>97,712,777</b>	<b>106,112,516</b>
Capital paid up	22,004,140	24,706,315	26,400,185	30,805,690	32,105,960
Reserves	32,823,231	42,135,004	48,223,038	58,231,889	64,475,043
<b>Guaranteed Funds—Trust Deposits and Certificates</b>	<b>519,401,875</b>	<b>632,659,981</b>	<b>798,722,300</b>	<b>967,843,662</b>	<b>1,132,113,512</b>
<b>CHARTERED BY PROVINCES<sup>6</sup></b>					
	1961	1962	1963	1964	1965
	\$	\$	\$	\$	\$
<b>Assets</b>					
<b>Company Funds<sup>2,3</sup></b>	<b>129,352,820</b>	<b>140,787,304</b>	<b>162,291,058</b>	<b>200,303,367</b>	<b>204,768,769</b>
Real estate <sup>4</sup>	14,186,725	17,966,216	19,067,782	21,198,596	20,678,341
Mortgages and agreements of sale	10,007,435	8,673,612	13,758,082	21,929,416	17,220,404
Collateral loans	16,277,588	12,492,154	11,184,235	8,290,416	11,277,487
Bonds	24,104,945	23,049,533	26,496,161	43,774,799	38,712,032
Stocks	48,001,106	53,254,583	55,633,197	62,751,445	68,073,051
Cash	7,245,667	10,849,812	18,667,903	13,861,802	10,231,463
<b>Guaranteed Funds<sup>2</sup></b>	<b>899,871,495</b>	<b>1,061,205,513</b>	<b>1,305,530,825</b>	<b>1,642,678,032</b>	<b>2,039,499,564</b>
Mortgages and agreements of sale	329,404,454	432,117,245	579,166,856	799,145,303	1,115,666,354
Collateral loans	39,809,753	62,187,479	98,609,361	78,802,569	97,530,525
Bonds	481,645,708	524,673,307	562,615,974	682,254,998	729,794,297
Stocks	4,642,875	4,571,162	6,499,113	5,205,930	8,887,842
Cash	23,650,461	25,177,931	33,855,327	45,547,824	63,654,014
<b>Liabilities</b>					
<b>Company Funds<sup>5</sup></b>	<b>129,352,820</b>	<b>140,787,304</b>	<b>162,291,058</b>	<b>200,303,367</b>	<b>204,768,769</b>
Capital paid up	32,945,340	36,917,543	43,271,752	60,876,093	65,504,315
Reserves	60,400,074	71,507,051	87,594,226	93,464,883	102,664,506
<b>Guaranteed Funds—Trust Deposits and Certificates</b>	<b>899,871,495</b>	<b>1,061,205,513</b>	<b>1,305,530,825</b>	<b>1,642,678,032</b>	<b>2,039,499,564</b>

<sup>1</sup> Includes companies chartered by the Governments of Nova Scotia, New Brunswick and Manitoba, which, by arrangement, are inspected by the federal Department of Insurance. <sup>2</sup> Includes other assets. <sup>3</sup> Includes interest due and accrued. <sup>4</sup> Book value of real estate for company use and other real estate. <sup>5</sup> Includes other company fund liabilities. <sup>6</sup> Chartered by all provinces except Nova Scotia, New Brunswick and Manitoba (see text, p. 1136).



**22.—Estates, Trust and Agency Funds of Trust Companies, Chartered by or Supervised by the Federal Government and by Provincial Governments, as at Dec. 31, 1956-65**

Year	Federal Companies <sup>1</sup>	Provincial Companies <sup>2</sup>	Total	Year	Federal Companies <sup>1</sup>	Provincial Companies <sup>2</sup>	Total
	\$	\$	\$		\$	\$	\$
1956.....	815,367,349	4,318,560,879	5,133,928,228	1961.....	1,948,445,628	6,170,097,541	8,118,543,169
1957.....	886,560,559	4,695,817,867	5,582,378,426	1962.....	2,195,628,230	6,818,580,561	9,014,208,791
1958.....	990,078,160	5,328,920,074	6,318,998,234	1963.....	2,371,284,565	7,594,738,180	9,966,022,745
1959.....	1,127,767,607	5,774,745,226	6,902,512,833	1964.....	2,728,744,451	8,542,766,048	11,271,510,499
1960.....	1,246,508,258	6,143,921,379	7,390,429,637	1965.....	3,168,647,670	9,419,621,484	12,588,269,154

<sup>1</sup> Includes companies chartered by the Governments of Nova Scotia, New Brunswick and Manitoba which, by arrangement, are inspected by the federal Department of Insurance. <sup>2</sup> Excludes provincial companies of Nova Scotia, New Brunswick and Manitoba which are included with federal companies.

**Subsection 2.—Licensed Small Loans Companies and Licensed Money-Lenders\***

Small loans companies and money-lenders are subject to the Small Loans Act (RSC 1952, c. 251, as amended by SC 1956, c. 46). This Act, first passed in 1939, sets maximum charges on personal cash loans not in excess of \$1,500 and is administered by the Department of Insurance. Lenders not licensed under the Act may not charge more than 1 p.c. per month. Those wishing to make small loans at higher rates must be licensed each year by the Minister of Finance under the Small Loans Act. The Act allows maximum rates, including charges of every kind, of 2 p.c. per month on unpaid balances not exceeding \$300, 1 p.c. per month on the portion of unpaid balances exceeding \$300 but not exceeding \$1,000 and one half of 1 p.c. on any remainder of the balance exceeding \$1,000. Loans in excess of \$1,500 are not regulated and lenders operating entirely above this limit and the larger loans of licensed lenders are thus exempt from the Act. Nor does the Act regulate charges for the instalment financing of sales. Prior to Jan. 1, 1957, the Act applied only to loans of \$500 or less and the maximum rate was 2 p.c. per month.

At the end of 1965, there were six small loans companies and 83 money-lenders licensed under the Act. Small loans companies are incorporated by special Acts of the Parliament of Canada, the first of them commencing business in 1928; the money-lenders include provincially incorporated companies and a few partnerships and individuals. Many of the small loans companies and money-lenders are affiliated with other financial institutions, principally Canadian sales finance companies and American finance or loan companies, and these subsidiary companies account for a high proportion of the total business of licensed lenders. The affiliations with sales finance companies reflect the close relationship between instalment financing and the consumer loan business. The Dominion Bureau of Statistics publishes quarterly balance sheets for sales finance and consumer loan companies as a whole and does not attempt to distinguish two groups within the industry.†

The subsidiary small loans companies and money-lenders obtain most of their funds through their parent companies. A few of the larger companies have supplemented their bank loans by selling short-term paper in the market but the amount has been small compared with the short-term market borrowing of the sales finance companies. The smaller independent companies rely mainly on their shareholders and on borrowing from the chartered banks.

The annual figures of assets and liabilities given in Table 23 for 1962-65 are from the Department of Insurance report.‡

\* Prepared by the Research Department of the Bank of Canada in co-operation with the Superintendent of Insurance for Canada.

† See *Business Financial Statistics* (Catalogue No. 61-006). More complete data on the business of licensed lenders are given in the *Report of the Superintendent of Insurance for Canada on Small Loans Companies and Money-Lenders* for the year ended Dec. 31, 1965. (Catalogue No. In 3-4/1965.)

## 23.—Assets and Liabilities of Small Loans Companies and Money-Lenders, 1962-65

Assets and Liabilities	1962	1963	1964	1965
	\$	\$	\$	\$
<b>Assets</b> .....	<b>677,428,408</b>	<b>735,660,587</b>	<b>797,271,316</b>	<b>899,510,592</b>
Small loan balances.....	482,246,944	530,030,909	575,126,976	627,526,360
Balances, large loans and other contracts.....	179,888,234	187,336,161	203,473,461	238,469,695
Cash.....	5,924,323	7,999,302	8,546,620	10,602,031
Other.....	9,368,907	10,294,215	12,124,259	22,912,506
<b>Liabilities</b> .....	<b>677,428,408</b>	<b>735,660,587</b>	<b>797,271,316</b>	<b>899,510,592</b>
Borrowed money.....	553,914,368	598,496,241	647,138,005	728,802,326
Reserves for losses.....	13,202,526	14,962,448	17,895,299	19,843,853
Paid-up capital.....	45,030,972	48,358,329	49,044,243	51,749,884
Surplus paid in by shareholders.....	407,390	449,865	443,370	5,443,994
Earned surplus.....	29,462,148	34,409,797	37,671,201	38,817,315
Other.....	35,411,004	38,983,907	45,079,198	54,853,220

The combined companies showed an increase in the amount of business done in 1965 compared with 1964. The number of small loans made to the public during 1965 increased from 1,469,694 to 1,556,294 or by about 6 p.c., and the amount of such loans rose from \$837,636,532 to \$904,651,318 or by about 8 p.c. The average small loan made was approximately \$581 compared with \$542 in 1964. At the end of the year, small loans outstanding numbered 1,245,921 for an amount of \$627,526,360 or an average of \$504 per loan; comparable figures for 1964 were 1,165,236, \$575,126,976 and \$494, respectively.

Gross profits of small loans companies and money-lenders before income taxes and before taking into account any increase or decrease in reserves for bad debts decreased from \$29,829,874 in 1964 (\$19,205,033 being the profit on small loans and \$10,624,841 the profit on business other than small loans) to \$27,521,976 in 1965 (\$16,633,703 being the profit on small loans and \$10,888,273 the profit on business other than small loans).

## Subsection 3.—Foreign Exchange

The dollar, established officially as the currency of the united provinces of Canada on Jan. 1, 1858, and extended to cover the New Dominion by the Uniform Currency Act of 1870, was defined as 15/73 of the British gold sovereign.\* That is, the par rate of exchange between the dollar and the pound sterling was fixed at \$4.866, making the Canadian currency the equivalent of the United States dollar at parity. With minor variations between the import and export gold points representing the cost of shipping gold in either direction, the value of the pound sterling in Canada remained at this level until the outbreak of World War I. The United States dollar, on the other hand, was at a discount in terms of Canadian funds for the first eleven years after Confederation since it was not redeemable in gold from February 1862 to January 1879. On the basis of gold equivalents it would appear that the greatest monthly average discount on the United States dollar after Confederation was approximately 31 p.c., reached in August 1868. From 1879 to 1914 the dollars of the two countries remained at par, varying only within the gold points or under \$2 per thousand.

On the outbreak of World War I, Canada and Britain suspended the gold standard. For some weeks both the pound and the Canadian dollar rose to a premium in New York. Subsequently both fell back with the pound going to a slight discount. In January 1916 the pound was officially pegged at \$4.76 in American funds. This level was maintained with the help of funds realized by sales of United States securities owned by residents of Britain, by borrowing in the United States and, after the American entry into the War, by the United States Government financing Allied purchases in that country.

\* The gold sovereign remained the standard for the Canadian dollar until 1910 when the currency was defined in terms of fine gold, making it the exact gold equivalent of the United States dollar. Both British and United States gold coins were, however, legal tender in Canada for this whole period.

From 1915 to the end of 1917, fluctuations in the rate of exchange between the Canadian and United States dollars did not exceed 2 p.c. on either side of parity; the pound was stable in terms of United States dollars during this period. In 1918 the Canadian dollar began to weaken. After the pound was unpegged in 1919, the Canadian dollar declined further and in 1920 it fell to 82 cents in New York with sterling going as low as \$3.18.

By the latter half of 1922 the Canadian dollar had returned practically to par in New York. Despite some further weakness in sterling, the dollar remained close to that level during the next two years, averaging 98.04 and 98.73 cents in terms of the United States dollar in 1923 and 1924, respectively, and fluctuating between a discount of about 3.6 cents and a premium of approximately 0.4 cents. After Britain resumed gold payments in April 1925, the range of fluctuation of the Canadian dollar narrowed further. From Canada's return to the gold standard in the period July 1, 1926 to January 1929, the exchange rate remained within the gold points. The Canadian dollar then went to a slight discount in New York. With the exception of the period July to November 1930, when it went to a small premium in New York, the dollar remained below parity until Britain abandoned the gold standard in September 1931. After that month the pound sterling depreciated sharply and the Canadian dollar followed, reaching lows\* in New York of 80.5 cents in December 1931 and 82.6 cents in April 1933.

Following the prohibition of gold exports in the latter month by the United States, the pound and the Canadian dollar strengthened rapidly in terms of American funds. By November 1933 both currencies had reached a premium in New York. Meanwhile, in a series of steps beginning with permitting the export of newly mined gold in August 1933, the United States moved toward resumption of the gold standard. As of Feb. 1, 1934, the United States Treasury undertook to buy all gold offered at \$35 per ounce. After that the exchange rate between the Canadian and United States dollars stabilized. Until the outbreak of war in 1939 much of the trading was conducted within one cent of parity although the Canadian dollar in New York did go as high as 103.6 cents (September 1934) and as low as 98.0 cents (September 1938).\*

On the outbreak of World War II in September 1939, Britain and other sterling countries introduced foreign exchange control involving fixed buying and selling rates of \$4.02½ and \$4.03½, respectively, in terms of the United States dollar. The Canadian dollar in New York declined until Sept. 16, 1939, when the Government instituted foreign exchange control† in Canada and established fixed buying and selling rates of \$1.10 to \$1.11 for the U.S. dollar and \$4.43 to \$4.47 for sterling. As compared with previous months, the depreciation of the Canadian dollar in terms of United States funds was approximately half as great as that of the pound sterling.

Apart from a minor adjustment on Oct. 15, 1945, when selling rates for U.S. dollars and sterling were lowered to \$1.10½ and \$4.45, respectively, the official rates for the Canadian dollar remained unchanged until July 5, 1946. At that time the rate on the U.S. dollar was restored to par, with buying and selling rates for that currency of \$1.00 to \$1.00½ and for sterling \$4.02 to \$4.04. These rates continued in effect until Sept. 19, 1949 when, following a 30.5-p.c. reduction by Britain in the value of sterling to \$2.80 U.S. (an action which was paralleled in varying degrees by numerous other currencies), Canada returned to the former official rates of \$1.10 and \$1.10½ for United States funds. Sterling was quoted at \$3.07¼ and \$3.08¼ on the basis of the New York cross rate.

On Sept. 30, 1950, the Minister of Finance announced that official fixed foreign exchange rates which had been in effect at varying levels since 1939 would be withdrawn effective Oct. 2, and that the rate would henceforth be determined in the market for foreign exchange. This policy was carried out within the framework of exchange control until Dec. 14, 1951, at which time the Foreign Exchange Control regulations were revoked by the Governor in Council, terminating the period of exchange control that had prevailed in Canada since 1939. The Foreign Exchange Control Act was repealed in 1952. On

\* Noon quotations. Daily highs and lows may have exceeded these rates.

† The operations of the Foreign Exchange Control Board from the time of its establishment to the termination of exchange control in December 1951 are reviewed in the 1941 to 1952-53 editions of the Year Book.



May 2, 1962, the Minister of Finance announced that the Canadian dollar was being stabilized at a fixed par value of 92½ cents in terms of United States currency. This action was taken with the concurrence of the International Monetary Fund and, in accordance with the Articles of Agreement of that organization, the Government of Canada undertook to maintain the Canadian exchange rate within a margin of 1 p.c. on either side of the established par value. The movements of the U.S. dollar in Canadian funds from January 1957 to December 1966 are shown in Table 24.

#### 24.—Price of the United States Dollar in Canada, by Month, 1957-66

NOTE.—Rates published by Bank of Canada. Noon average market rate for business days in period.  
(Canadian cents per U.S. dollar)

Month	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
January.....	96.07	98.47	96.69	95.31	99.29	104.50	107.71	108.02	107.38	107.46
February.....	95.83	98.10	97.49	95.17	98.96	104.88	107.76	108.00	107.58	107.63
March.....	95.61	97.73	96.98	95.09	98.73	104.94	107.80	108.05	108.11	107.62
April.....	95.97	97.06	96.35	96.29	98.89	104.98	107.68	108.09	107.92	107.70
May.....	95.56	96.69	96.29	97.81	98.75	108.23	107.72	108.09	107.95	107.67
June.....	95.32	96.18	95.88	98.23	100.55	108.79	107.82	108.09	108.23	107.65
July.....	95.09	96.00	95.74	97.84	103.41	107.89	107.97	108.13	108.35	107.48
August.....	94.80	96.46	95.44	96.98	103.15	107.76	108.29	107.87	107.84	107.51
September.....	95.92	97.68	95.16	97.25	103.08	107.68	107.98	107.61	107.64	107.62
October.....	96.47	97.07	94.77	97.85	103.03	107.60	107.79	107.53	107.51	107.93
November.....	96.24	96.83	95.03	97.67	103.57	107.68	107.76	107.39	107.49	108.20
December.....	97.74	96.46	95.12	98.24	104.27	107.60	107.93	107.46	107.58	108.31
Annual Average.....	95.88	97.06	95.90	96.97	101.32	106.89	107.85	107.86	107.80	107.73

#### 25.—Canada's Official Holdings of Gold and United States Dollars, as at Dec. 31, 1957-66

NOTE.—Holdings comprise gold, U.S. dollars and short-term securities of the U.S. Government held by the Exchange Fund Account, other government accounts and net holdings of the Bank of Canada.

(Millions of U.S. dollars)

Year	Gold	U.S. Dollars	Total	Year	Gold	U.S. Dollars	Total
1957.....	1,100.3	728.0	1,828.3	1962.....	708.5	1,830.9	2,539.4 <sup>2</sup>
1958.....	1,078.1	861.0	1,939.1	1963.....	817.2	1,777.8	2,595.0 <sup>2</sup>
1959.....	959.6 <sup>1</sup>	909.6	1,869.2 <sup>1</sup>	1964.....	1,025.7	1,648.6	2,674.3 <sup>3</sup>
1960.....	885.3	943.9	1,829.2	1965.....	1,150.8	1,513.7	2,664.5 <sup>3</sup>
1961.....	946.2	1,109.6	2,055.8	1966.....	1,045.6	1,190.3	2,235.9 <sup>3</sup>

<sup>1</sup> On Oct. 1, 1959, \$62,500,000 representing the gold portion of Canada's increased quota was transferred to the International Monetary Fund.

<sup>2</sup> Includes the proceeds of a drawing equivalent to U.S. \$300,000,000 which was made from the International Monetary Fund in June 1962 and which was outstanding at year-end. The amount of Canada's net obligation to the International Monetary Fund was \$275,700,000 at Dec. 31, 1962 and \$196,000,000 at Dec. 31, 1963.

<sup>3</sup> Canada's net creditor position with the International Monetary Fund was \$60,000,000 at Dec. 31, 1964, \$215,900,000 at Dec. 31, 1965 and \$263,500,000 at Dec. 31, 1966.

#### Subsection 4.—The Bond Market\*

**Sales of Canadian Bonds.**—Canadian borrowers, both government and corporate, raised a net total of \$1,783,000,000 on the bond market in 1965, considerably less than the \$2,839,000,000 raised in 1964. Government revenues rose relative to expenditures, reducing government demands on the market; corporations had an increased need for funds but put greater emphasis on other forms of borrowing.

The Federal Government retired \$52,000,000 of its outstanding securities during 1965. There was a budgetary surplus of \$70,000,000 for the year and non-budgetary cash requirements (primarily for loans and advances) were almost covered by non-budgetary receipts

\* Prepared (November 1966) by the Central Classification Research and Development Staff of the Dominion Bureau of Statistics, using data published by the Bank of Canada, and from the Budget Papers, Mar. 29, 1966.

from repayment of loans, annuity and pension funds, and other sources. There was a marked change in the type of debt outstanding with marketable bonds being retired and savings bonds issued.

Both provincial and municipal governments increased their debt outstanding by smaller amounts in 1965 than in 1964. Part of this decline was made possible by increases in bank loans of \$29,000,000 to provincial governments and \$158,000,000 to municipal governments.

Corporation bonds (including short-term paper of finance and other corporations) issued during 1965 amounted to \$850,000,000, a decline from \$1,029,000,000 in 1964. Business capital expenditures increased by almost \$2,000,000,000 while savings increased by much less, resulting in a sharply increased need for funds. However, as a result of the United States guidelines and the Atlantic Acceptance Corporation default on its obligations, many corporations, particularly financial corporations, were forced to rely less on the money market in 1965 than in 1964. Although bond issues in 1965 amounted to \$1,122,000,000, a substantial increase from issues in the previous year, there was a net redemption of finance company paper and other short-term commercial paper. Bank loans to sales finance companies increased by 76 p.c. in 1965 and to other corporations by 14 p.c. Foreign direct investment in Canada also increased substantially.

**Bonds Outstanding.**—Total government and business bonds outstanding were estimated at \$48,235,000,000 at Dec. 31, 1965, an increase of 25 p.c. over the \$38,533,000,000 outstanding at the end of 1961. The largest increase of 45 p.c. during the period was in provincial bonds but part of this increase was due to the purchase by the Province of Quebec in 1963 of private hydro-electric companies operating in that province, and the subsequent replacement of corporation bonds by provincial government guaranteed bonds. The total of outstanding bonds includes treasury bills, finance company paper and other short-term commercial paper. It does not include the term deposits, certificates and debentures of trust and mortgage loan companies which totalled over \$3,000,000,000 at the end of 1965. Also excluded is mortgage debt, which the Central Mortgage and Housing Corporation estimated to be over \$18,000,000,000 at the end of 1964.

## 26.—Net New Issues of Canadian Bonds, 1961-65 and Bonds Outstanding, as at Dec. 31, 1961-65

NOTE.—Federal, provincial and municipal bonds include direct and guaranteed issues; corporation bonds include finance company and other short-term commercial paper; "other bonds" include bonds of religious and other institutions and a small amount of foreign bonds payable in Canadian dollars.

Item	1961	1962	1963	1964	1965
<b>BONDS ISSUED</b>					
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Government of Canada.....	890	801	827	457	-52
Treasury bills.....	-100	280	75	-100	10
Marketable bonds.....	347	38	273	55	-395
Non-marketable bonds.....	643	483	479	502	333
Provincial Government.....	944	709	901	942	743
Municipal Government.....	317	230	334	401	203
Corporations.....	342	626	706	1,029	850
Finance company paper.....	-51	144	166	259	-152
Other short-term paper.....	65	58	-43	46	-120
Bonds.....	528	424	583	724	1,122
Other bonds.....	28	8	29	11	39
<b>Totals.....</b>	<b>2,521</b>	<b>2,374</b>	<b>2,797</b>	<b>2,839</b>	<b>1,783</b>
<b>BONDS OUTSTANDING, DEC. 31</b>					
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Government of Canada.....	18,636	19,448	20,276	20,733	20,681
Provincial Government.....	8,211	9,051	10,206	11,149	11,895
Municipal Government.....	4,058	4,363	4,698	5,098	5,301
Corporate.....	7,335	7,962	8,223	9,013	9,978
Other bonds.....	293	302	331	342	380
<b>Totals.....</b>	<b>38,533</b>	<b>41,126</b>	<b>43,734</b>	<b>46,335</b>	<b>48,235</b>

**Distribution of Bond Holdings.**—Table 27 shows the estimated distribution, as at Dec. 31, 1964, of government, corporate, and other bonds among the major purchasers of securities. Of the total, 18 p.c. were held by non-residents and the largest identified holders were chartered banks with 11 p.c., life insurance companies with 10 p.c., and trusted pension plans with 8 p.c. The "All other resident" category, which contains all holdings not allocated to specific holders, had \$15,022,000,000 or 32 p.c. of the total. Of this amount, however, \$5,866,000,000 consisted of Government of Canada savings bonds.

### 27.—Estimated Distribution of Bond Holdings, as at Dec. 31, 1964

NOTE.—Federal, provincial and municipal bonds include direct and guaranteed issues; corporation bonds include finance company and other short-term commercial paper; "other bonds" include bonds of religious and other institutions and a small amount of foreign bonds payable in Canadian dollars.

Holder	Government of Canada Bonds	Provincial Government Bonds	Municipal Government Bonds	Corporate <sup>1</sup> and Other Bonds	Total
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Bank of Canada.....	3,115	—	—	177	3,292
Chartered banks.....	3,705	372	307	487	4,871
Government of Canada.....	769	—	—	—	769
Provincial governments.....	550	1,413	310	167	2,440
Municipal governments.....	76	114	403	2	595
Life insurance companies.....	611	1,075	727	2,175	4,588
Other insurance companies.....	530	332	151	187	1,200
Quebec savings banks.....	31	78	33	26	168
Trust and loan companies.....	505	205	140	240	1,090
Trusted pension plans.....	364	1,868	594	892	3,718
All other resident.....	9,404	2,920	1,155	1,543	15,022
Non-resident.....	1,073	2,772	1,278	3,459	8,582
<b>All Holders.....</b>	<b>20,733</b>	<b>11,149</b>	<b>5,098</b>	<b>9,355</b>	<b>46,335</b>

<sup>1</sup> All short-term commercial borrowing is included in the "All other resident" item.

## PART II.—INSURANCE\*

### Section 1.—Life Insurance

Life insurance in force in Canada with companies registered by the Federal Government (exclusive of fraternal benefit societies) amounted to \$69,656,000,000 at the end of 1965, an increase of \$6,984,000,000 during the year. The ratio of gain in business in force, expressed as a percentage of the amount in force at the beginning of the same year, was 11.1 p.c. in 1965.

Year	In Force at Beginning of Year	Increase in Force for the Year	Per- centage Gain
	\$'000,000	\$'000,000	
1930.....	6,157	335	5.4
1935.....	6,221	38	0.6
1940.....	6,776	200	2.9
1945.....	9,140	612	6.7
1950.....	14,409	1,337	9.3
1955.....	23,135	2,317	10.0
1956.....	25,452	3,635	14.3
1957.....	29,087	4,000	13.8
1958.....	33,087	3,409	10.3
1959.....	36,496	4,378	12.0
1960.....	40,874	3,775	9.2
1961.....	44,649	3,635	8.1
1962.....	48,284	3,949	8.2
1963.....	52,233	4,571	8.8
1964.....	56,804	5,868	10.3
1965.....	62,672	6,984	11.1

\* Material in this Part, except as otherwise indicated, was prepared under the direction of the Superintendent of Insurance for Canada, Ottawa. More detailed data are available in the annual reports of the Department of Insurance.



**Subsection 1.—Summary of Life Insurance in Canada**

Table 1 summarizes insurance premiums, claims, amounts of new policies effected and amounts of insurance in force on Dec. 31, 1965. These data are presented according to supervising government authorities for the companies and societies concerned, and according to nationality of company or society.

**1.—Summary of Life Insurance in Canada according to Supervising Government Authority and by Nationality of Company or Society, 1965**

Supervising Authority and Nationality of Company or Society	Insurance Premiums	Claims <sup>1</sup>	New Policies Effected	Insurance in Force, Dec. 31
	\$'000	\$'000	\$'000	\$'000
<b>Supervising Authority</b>				
<b>Federally Registered</b> .....	<b>981,471</b>	<b>374,238</b>	<b>9,128,271</b>	<b>70,618,756</b>
Companies.....	962,148	368,148	8,967,408	69,655,958
Societies.....	19,323	6,090	160,863	962,798
<b>Provincially Licensed Only</b> .....	<b>72,263</b>	<b>27,151</b>	<b>863,530</b>	<b>5,046,842</b>
Within Province of Incorporation—				
Companies.....	55,264	18,753	660,151	3,911,735
Societies.....	4,178	2,907	92,489	380,676
Outside Province of Incorporation—				
Companies.....	9,667	3,228	83,902	596,550
Societies.....	3,154	2,263	26,988	157,881
<b>Totals</b> .....	<b>1,053,734</b>	<b>401,389</b>	<b>9,991,801</b>	<b>75,665,598</b>
<b>Nationality of Company or Society</b>				
Canadian Companies—				
Federally registered.....	640,358	252,524	5,868,616	47,900,425
Provincially licensed only.....	64,931	21,981	744,053	4,508,285
Canadian Societies—				
Federally registered.....	13,298	3,973	128,415	705,263
Provincially licensed only.....	7,332	5,170	119,477	538,557
British Companies—				
Federally registered.....	49,133	10,468	523,734	3,070,766
Foreign Companies—				
Federally registered.....	272,657	105,156	2,575,058	18,684,767
Foreign Societies—				
Federally registered.....	6,025	2,117	32,448	257,535

<sup>1</sup> Death, disability and maturity under insurance contracts.

**Subsection 2.—Operational Statistics for Life Insurance Transacted in Canada by Companies under Federal Registration**

The amount of life insurance in force in Canada has shown an almost continuous advance year by year since the beginning of the record in 1869. The amount per capita of the estimated population has more than doubled since 1955.

The operations analysed in the tables of this Subsection, with the exception of Table 6, include only those of companies under federal registration and are exclusive of fraternal organizations and provincial licensees. However, companies under federal registration account for over 93 p.c. of the life insurance in force in Canada.

## 2.—Life Insurance Effected and in Force in Canada by Companies under Federal Registration, Decennially 1880-1950 and Annually 1955-65

NOTE.—Figures for 1889-1900 are given in the 1938 Year Book, p. 958; for 1901-39 in the 1942 edition, p. 855; and for 1940-54 in the 1957-58 edition, p. 1168. Statistics of fraternal society insurance, excluded here, are given at pp. 1151-1153.

Year	New Insurance Effected during Year	Insurance in Force Dec. 31				Insurance in Force per Capita <sup>1</sup>
		Canadian Companies	British Companies	Foreign Companies	Total	
	\$	\$	\$	\$	\$	\$
1880.....	13,906,887	37,838,518	19,789,863	33,643,745	91,272,126	21.45
1890.....	39,802,956	135,218,990	31,613,730	81,591,847	248,424,567	51.98
1900.....	67,729,115	267,151,086	39,485,344	124,433,416	431,069,846	81.32
1910.....	150,785,305	565,667,110	47,816,775	242,629,174	856,113,059	122.51
1920.....	630,110,900	1,664,348,605	76,883,090	915,793,798	2,657,025,493	310.55
1930.....	884,749,748	4,319,370,209	117,410,860	2,055,502,125	6,492,283,194	636.00
1940.....	590,205,536	4,609,213,977	145,603,299	2,220,505,184	6,975,322,460	612.89
1950.....	1,798,864,211	10,756,249,942	342,878,530	4,646,707,595	15,745,836,067	1,143.33
1955.....	3,154,670,863	17,401,229,498	691,660,141	7,358,681,886	25,451,571,525	1,621.33
1956.....	4,119,767,664	19,783,194,985	819,968,279	8,484,252,879	29,087,416,143	1,808.83
1957.....	4,936,358,903	22,262,730,280	994,762,620	9,829,563,601	33,087,056,501	1,992.00
1958.....	5,129,714,126	24,560,264,322	1,170,343,105	10,765,171,257	36,495,778,685	2,136.76
1959.....	5,622,229,317	27,695,965,612	1,332,991,403	11,844,852,757	40,873,809,772	2,337.92
1960.....	5,692,887,763	30,418,380,871	1,554,844,168	12,675,749,459	44,648,974,498	2,498.54
1961.....	6,113,480,078	33,143,378,921	1,778,255,673	13,362,848,638	48,284,483,232	2,647.47
1962.....	6,027,039,888	35,907,032,820	2,040,700,311	14,285,636,913	52,233,370,044	2,812.78
1963.....	6,933,120,080	39,135,221,497	2,328,769,718	15,339,860,385	56,803,851,600	3,006.13
1964.....	7,802,504,767	43,209,488,534	2,706,336,254	16,756,485,863	62,672,310,651	3,258.24
1965.....	8,967,408,329	47,900,424,908	3,070,766,357	18,684,766,954	69,655,958,219	3,559.14

<sup>1</sup> Based on official estimates of population.

## 3.—Summary of Life Insurance in Canada Transacted by Companies under Federal Registration, 1963-65

Item	1963	1964	1965
<b>Canadian Companies—</b>			
New policies effected during year..... No.	387,786	411,960	408,403
..... \$	4,661,935,501	5,067,071,852	5,868,615,959
Policies in force Dec. 31..... No.	5,300,787	5,400,676	5,471,733
..... \$	39,135,221,497	43,209,488,534	47,900,424,908
Policies ceased by death or maturity..... No.	55,028	57,488	62,166
..... \$	206,767,303	217,321,442	243,837,741
Insurance premiums..... \$	566,875,249	602,049,648	640,358,269
Claims incurred <sup>1</sup> ..... \$	220,924,829	224,797,465	252,523,784
<b>British Companies—</b>			
New policies effected during year..... No.	34,361	34,392	37,421
..... \$	406,984,738	493,267,178	523,734,283
Policies in force Dec. 31..... No.	295,008	308,152	323,461
..... \$	2,328,769,718	2,706,336,254	3,070,766,357
Policies ceased by death or maturity..... No.	2,394	2,339	2,429
..... \$	7,806,134	8,763,908	10,291,362
Insurance premiums..... \$	40,091,286	45,959,175	49,133,327
Claims incurred <sup>1</sup> ..... \$	8,914,208	8,955,056	10,468,423
<b>Foreign Companies—</b>			
New policies effected during year..... No.	269,090	263,553	239,997
..... \$	1,864,199,841	2,242,165,737	2,575,058,087
Policies in force Dec. 31..... No.	4,653,937	4,583,808	4,513,610
..... \$	15,339,860,385	16,756,485,863	18,684,766,954
Policies ceased by death or maturity..... No.	65,500	66,540	69,701
..... \$	84,410,910	91,192,722	101,030,110
Insurance premiums..... \$	244,412,339	260,029,173	272,656,430
Claims incurred <sup>1</sup> ..... \$	87,087,771	95,522,880	105,156,253

For footnote, see end of table, p. 1148.

### 3.—Summary of Life Insurance in Canada Transacted by Companies under Federal Registration, 1963-65—concluded

Item		1963	1964	1965
<b>All Companies—</b>				
New policies effected during year.....	No.	691,237	709,905	685,821
	\$	6,933,120,080	7,802,504,767	8,967,408,329
Policies in force Dec. 31.....	No.	10,249,732	10,292,636	10,308,804
	\$	56,803,851,600	62,672,310,651	69,655,958,219
Policies ceased by death or maturity.....	No.	123,012	126,367	134,296
	\$	298,984,347	317,273,072	355,159,213
Insurance premiums.....	\$	851,378,874	908,037,996	962,148,026
Claims incurred <sup>1</sup> .....	\$	316,926,808	329,275,401	368,148,460

<sup>1</sup> Death, disability and maturity under insurance and annuity contracts for 1963; death, disability and maturity under insurance contracts for 1964 and 1965.

### 4.—Ordinary and Industrial Life Insurance Policies Effected and in Force in Canada by Companies under Federal Registration, 1963-65

Year, Type of Policy and Nationality of Company	New Policies Effected			Policies in Force Dec. 31		
	No.	Amount	Average Amount per Policy	No.	Amount	Average Amount per Policy
		\$	\$		\$	\$
<b>1963</b>						
<b>Ordinary Policies—</b>						
Canadian.....	384,803	3,128,717,327	8,131	5,155,816	24,715,103,219	4,794
British.....	34,199	364,112,229	10,647	268,371	2,051,522,470	7,644
Foreign.....	247,712	1,367,535,580	5,521	2,720,131	8,812,138,127	3,240
<b>Industrial Policies—</b>						
Canadian.....	—	—	—	123,601	66,491,681	538
British.....	—	—	—	25,979	3,167,291	122
Foreign.....	18,140	10,237,154	564	1,915,433	753,487,915	393
<b>1964</b>						
<b>Ordinary Policies—</b>						
Canadian.....	408,595	3,518,198,772	8,610	5,262,296	26,502,689,639	5,036
British.....	34,265	404,705,850	11,811	282,554	2,318,879,284	8,207
Foreign.....	245,806	1,491,667,115	6,068	2,773,307	9,396,361,849	3,388
<b>Industrial Policies—</b>						
Canadian.....	—	—	—	115,323	63,157,245	548
British.....	—	—	—	24,881	2,986,453	120
Foreign.....	14,016	8,020,612	572	1,791,512	728,280,569	407
<b>1965</b>						
<b>Ordinary Policies—</b>						
Canadian.....	404,929	3,692,745,720	9,119	5,339,451	28,309,185,739	5,302
British.....	37,253	467,740,163	12,556	298,822	2,608,387,526	8,729
Foreign.....	225,399	1,769,815,012	7,852	2,816,398	10,338,608,829	3,671
<b>Industrial Policies—</b>						
Canadian.....	—	—	—	107,529	59,941,506	557
British.....	—	—	—	23,823	2,834,069	119
Foreign.....	10,618	6,151,513	579	1,677,608	694,414,184	414



**5.—Group Life Insurance Effectuated and in Force in Canada by Companies under Federal Registration, 1963-65**

Year and Nationality of Company	Effectuated		In Force Dec. 31			
	Policies	Amount	Policies	Certificates	Amount	Average Amount per Certificate
	No.	\$	No.	No.	\$	\$
<b>1963</b>						
Canadian.....	2,983	1,533,218,174	21,370	11,821,095	14,353,626,597	1,214
British.....	162	42,872,509	653	56,516	274,079,957	4,850
Foreign.....	3,238	486,427,107	18,373	4,355,598	5,774,234,343	1,326
<b>1964</b>						
Canadian.....	3,365	1,548,873,080	23,057	13,328,721	16,643,641,650	1,249
British.....	127	88,561,328	717	65,238	384,470,517	5,893
Foreign.....	3,731	742,478,010	18,989	5,257,234	6,631,843,445	1,261
<b>1965</b>						
Canadian.....	3,474	2,175,870,239	24,753	14,215,563	19,531,297,663	1,374
British.....	168	55,994,120	816	339,855	459,544,762	1,352
Foreign.....	3,980	799,091,562	19,604	5,392,121	7,651,743,941	1,419

**6.—Insurance Death Rates in Canada, 1963-65**

Type of Insurer	1963			1964			1965		
	Policies Exposed to Risk	Policies Terminated by Death	Death Rate per 1,000	Policies Exposed to Risk	Policies Terminated by Death	Death Rate per 1,000	Policies Exposed to Risk	Policies Terminated by Death	Death Rate per 1,000
	No.	No.		No.	No.		No.	No.	
All companies, ordinary.....	8,090,829	45,882	5.7	8,259,604	46,082	5.6	8,410,880	48,932	5.8
All companies, industrial.....	2,151,118	29,754	13.8	2,012,567	28,406	14.1	1,884,620	28,564	15.2
Fraternal benefit societies.....	490,374	4,251	8.7	496,308	4,361	8.8	500,272	4,231	8.5
<b>Totals.....</b>	<b>10,732,321</b>	<b>79,887</b>	<b>7.4</b>	<b>10,768,479</b>	<b>78,849</b>	<b>7.3</b>	<b>10,795,772</b>	<b>81,727</b>	<b>7.6</b>

**Subsection 3.—Finances of Companies Transacting Life Insurance under Federal Registration**

The financial statistics in Tables 7 and 8 relate only to life insurance transacted by companies under federal registration. The figures for British and foreign companies apply to their assets, liabilities and operations in Canada only. On the other hand, the assets and liabilities, revenue and expenditure of Canadian companies are given for total business, including business arising outside of Canada as well as in Canada.

**7.—Total Assets and Liabilities for Life Insurance of Canadian Companies under Federal Registration and Assets and Liabilities in Canada for Life Insurance of British and Foreign Companies under Federal Registration, 1963-65.**

Assets and Liabilities	1963	1964	1965
	\$	\$	\$
<b>Canadian Companies</b>			
<b>Total Assets:</b> .....	<b>10,522,735,490</b>	<b>11,311,660,952</b>	<b>12,096,778,697</b>
Bonds.....	4,647,180,012	4,873,843,798	4,995,956,689
Stocks.....	573,590,242	654,753,699	719,432,914
Mortgage loans on real estate.....	4,110,569,893	4,518,559,633	4,987,262,755
Agreements on sale of real estate.....	4,654,431	6,081,314	6,510,142
Real estate.....	315,589,652	327,023,761	368,008,580
Policy loans.....	496,321,955	518,703,162	546,450,107
Cash.....	104,317,302	90,646,318	109,753,225
Investment income, due and accrued.....	108,531,777	116,958,267	120,820,730
Outstanding insurance premiums and annuity considerations.....	74,322,044	76,750,520	79,375,563
Shares of company's capital stock (purchased under mutualization plan).....	15,450,000	10,650,000	6,850,000
Assets in segregated funds (at market values).....	24,861,161	60,158,388	94,283,633
Other assets.....	47,347,021	57,532,092	62,074,359
<b>Total Liabilities:</b> .....	<b>9,839,190,592</b>	<b>10,563,780,067</b>	<b>11,276,552,736</b>
Actuarial reserve for contracts in force.....	8,169,630,509	8,712,667,941	9,279,205,174
Outstanding claims under contracts.....	99,187,150	103,896,900	117,030,376
Amounts on deposit pertaining to contracts.....	823,005,097	904,447,952	960,802,666
Segregated funds.....	24,861,161	60,158,388	94,283,633
Other liabilities.....	722,506,585	782,608,886	825,230,887
Surplus.....	666,533,584	729,996,726	800,590,482
Capital stock paid up.....	17,011,404	17,884,159	19,635,479
<b>British Companies</b>			
<b>Assets in Canada:</b> .....	<b>707,601,679</b>	<b>797,069,554</b>	<b>859,121,919</b>
Bonds.....	373,526,632	392,759,401	386,116,676
Stocks.....	94,153,880	118,097,902	125,309,122
Mortgage loans on real estate.....	190,007,375	231,675,737	283,169,519
Real estate.....	18,093,373	20,519,232	23,544,883
Policy loans.....	12,809,738	13,873,562	15,454,409
Cash.....	1,430,067	2,257,172	1,578,373
Investment income, due and accrued.....	2,830,979	3,207,108	3,458,755
Outstanding insurance premiums and annuity considerations.....	2,770,709	2,674,149	2,699,208
Assets in segregated funds.....	515,669	727,733	3,052,105
Other assets.....	10,263,257	11,277,583	14,738,869
<b>Liabilities in Canada:</b> .....	<b>638,317,037</b>	<b>718,564,885</b>	<b>795,438,914</b>
Actuarial reserve for contracts in force.....	618,620,367	694,584,509	771,209,384
Outstanding claims under contracts.....	3,822,893	4,806,445	5,287,396
Segregated funds.....	515,669	727,733	2,427,209
Other liabilities.....	15,358,108	18,446,198	16,514,925
<b>Excess of assets over liabilities in Canada:</b> .....	<b>69,284,642</b>	<b>78,504,669</b>	<b>63,683,005</b>
<b>Foreign Companies</b>			
<b>Assets in Canada:</b> .....	<b>1,912,181,644</b>	<b>1,963,269,188</b>	<b>2,037,898,281</b>
Bonds.....	1,237,865,939	1,178,234,994	1,174,236,864
Stocks.....	2,055,300	2,264,500	2,950,300
Mortgage loans on real estate.....	531,673,132	624,823,361	698,196,664
Real estate.....	6,455,398	20,058,414	18,957,589
Policy loans.....	84,427,998	87,328,259	90,259,149
Cash.....	17,191,928	16,274,953	17,040,399
Investment income, due and accrued.....	22,125,990	22,515,070	23,647,943
Outstanding insurance premiums and annuity considerations.....	8,906,606	9,791,840	10,442,969
Other assets.....	1,479,353	1,977,797	2,166,404
<b>Liabilities in Canada:</b> .....	<b>1,706,619,834</b>	<b>1,786,169,524</b>	<b>1,879,615,694</b>
Actuarial reserve for contracts in force.....	1,555,014,242	1,619,055,795	1,693,024,707
Outstanding claims under contracts.....	20,413,617	22,900,164	26,993,406
Other liabilities.....	131,191,975	144,213,565	159,597,581
<b>Excess of assets over liabilities in Canada:</b> .....	<b>205,561,810</b>	<b>177,099,664</b>	<b>158,282,587</b>

<sup>1</sup> At book values. The liabilities include a reserve equal to the amount, if any, by which the total book value of bonds, stocks and real estate exceeds the total market value (or amortized value where applicable), subject to the provisions of Subsect. (4) of Sect. 71 of the Canadian and British Insurance Companies Act. <sup>2</sup> At market values.

**8.—Total Revenue and Expenditure for Life Insurance Transacted by Canadian Companies under Federal Registration and Revenue and Expenditure in Canada for Life Insurance Transacted by British and Foreign Companies under Federal Registration, 1963-65.**

Revenue and Expenditure	1963	1964	1965
	\$	\$	\$
<b>Canadian Companies</b>			
<b>Total Revenue.....</b>	<b>1,741,361,787</b>	<b>1,897,486,817</b>	<b>2,029,030,933</b>
Insurance premiums and annuity considerations.....	1,181,394,382	1,284,966,622	1,360,933,717
Investment income.....	525,631,408	578,944,182	633,463,342
Sundry items.....	34,335,997	33,576,013	34,633,874
<b>Total Expenditure.....</b>	<b>1,660,232,913</b>	<b>1,807,125,304</b>	<b>1,931,232,466</b>
Claims incurred.....	623,342,919	680,587,764	745,194,637
Normal increase in actuarial reserve.....	488,743,250	532,614,494	546,065,870
Taxes, licences and fees.....	32,386,030	34,037,100	38,773,947
Commissions and general expenses.....	266,156,383	287,634,170	304,891,500
Sundry items.....	82,684,163	88,254,270	95,730,238
Dividends to policyholders.....	151,641,798	165,028,870	182,799,181
Increase in provision for profits to policyholders.....	15,278,370	18,968,636	17,777,093
<b>Analysis of Increase in Surplus—</b>			
Excess of revenue over expenditure.....	81,128,874	90,361,513	97,798,467
Net capital gain on investments.....	-448,835	-712,697	-8,159,625
Other credits to surplus (net).....	-1,339,600 <sup>1</sup>	899,141 <sup>1</sup>	1,199,467 <sup>1</sup>
Net increase in special reserves or funds.....	-16,383,266	-15,079,009	-8,428,484
Special increase in actuarial reserve.....	-2,034,760	-9,877,135	-9,004,548
Dividends to shareholders.....	-2,243,932 <sup>2</sup>	-2,433,991	-2,726,995
Increase in surplus (policyholders and shareholders).....	58,678,481	63,157,822	70,678,282
<b>British Companies</b>			
<b>Revenue in Canada.....</b>	<b>129,472,597</b>	<b>143,176,165</b>	<b>151,481,735</b>
Insurance premiums and annuity considerations.....	92,545,611	98,915,129	102,521,936
Investment income.....	35,130,197	40,335,404	46,481,259
Sundry items.....	1,796,789	3,925,632	2,478,540
<b>Expenditure in Canada.....</b>	<b>61,027,253</b>	<b>69,458,537</b>	<b>79,964,103</b>
Claims incurred.....	32,547,385	36,780,812	43,338,044
Taxes, licences and fees.....	1,342,136	1,518,147	1,620,962
Commissions and general expenses.....	18,310,000	19,301,870	22,266,515
Other expenditure.....	1,782,492	2,014,832	3,463,006
Dividends to policyholders.....	7,045,240	9,842,876	9,275,576
<b>Foreign Companies</b>			
<b>Revenue in Canada.....</b>	<b>361,360,019</b>	<b>385,096,030</b>	<b>411,064,352</b>
Insurance premiums and annuity considerations.....	252,158,377	267,154,978	282,502,239
Investment income.....	92,530,394	100,045,655	107,689,243
Sundry items.....	16,671,248	17,895,397	20,872,870
<b>Expenditure in Canada.....</b>	<b>264,764,518</b>	<b>287,431,470</b>	<b>306,736,360</b>
Claims incurred.....	132,062,919	143,088,010	153,345,061
Taxes, licences and fees.....	12,763,771	17,134,368	19,056,414
Commissions and general expenses.....	59,618,377	62,077,276	65,151,502
Other expenditure.....	14,673,762	16,188,804	17,861,678
Dividends to policyholders.....	45,645,689	48,943,012	51,321,705

<sup>1</sup> Includes amounts written off shares purchased under mutualization plan. than those purchased by the company under mutualization plan.

<sup>2</sup> Dividends on shares other

**Subsection 4.—Life Insurance in Canada Transacted by Fraternal Benefit Societies**

In addition to life insurance, some fraternal benefit societies grant other insurance benefits to members, notably sickness benefits, but these are relatively unimportant. Table 9 gives statistics of life insurance in Canada transacted by fraternal benefit societies and Table 10 shows statistics of assets, liabilities, income and expenditure relating to all business of Canadian societies and to the business in Canada of foreign societies. The rates charged by these societies are computed to be sufficient to provide the benefits granted, having regard for actuarial principles. The benefit funds of each society must be valued annually by a qualified actuary (Fellow, by examination, of the Institute of Actuaries of Great Britain, of the Faculty of Actuaries in Scotland, or of the Society of



Actuaries) and a readjustment of rates or benefits must be made, unless the actuary certifies to the solvency of each fund. The first sections of Tables 9 and 10 relate to the Canadian societies registered by the federal Department of Insurance; there were 14 such societies at the end of 1965.

Under an amendment to the Insurance Act, effective Jan. 1, 1920, all foreign fraternal benefit societies were required to obtain authority from the Federal Government prior to transacting business in Canada. However, any such societies which at that date were transacting business under provincial licences, although forbidden to accept new members, were permitted to continue all necessary transactions in respect of insurance already in force. Most of these societies and some foreign societies that had not been licensed previously by the provinces have since obtained federal authority to transact business. At the end of 1965 there were 35 foreign fraternal benefit societies federally registered to transact business in Canada, although two of these do not grant life insurance benefits.

### 9.—Summary of Life Insurance in Canada Transacted by Fraternal Benefit Societies under Federal Registration, 1963-65

Item	1963	1964	1965
<b>Canadian Societies</b>			
Premiums..... \$	8,005,661	10,839,374	13,297,856
Claims incurred..... \$	5,034,573	5,602,166	6,065,474
New certificates effected..... No.	33,576	35,579	31,216
Certificates in force Dec. 31..... No.	119,167,173	121,952,835	128,415,057
Certificates ceased by death or maturity..... No.	315,836	322,137	322,142
	613,059,254	658,838,155	705,262,426
	3,213	3,358	3,717
	3,158,037	3,406,932	3,867,478
<b>Foreign Societies</b>			
Premiums..... \$	5,434,266	6,224,760	6,024,955
Claims incurred..... \$	2,869,636	3,007,317	3,251,190
New certificates effected..... No.	11,403	12,927	14,951
Certificates in force Dec. 31..... No.	28,250,934	29,920,567	32,447,680
	148,785	150,882	153,779
	232,054,345	245,087,050	257,535,185
Certificates ceased by death or maturity..... No.	2,022	2,241	2,097
	1,954,786	2,126,961	2,034,703

### 10.—Financial Statistics for Fraternal Benefit Societies under Federal Registration, 1963-65

Item	1963	1964	1965
	\$	\$	\$
<b>Canadian Societies<sup>1</sup></b>			
<b>Assets.....</b>	<b>213,233,586</b>	<b>237,202,293</b>	<b>261,079,632</b>
Bonds.....	142,250,011	157,776,937	170,829,356
Stocks.....	12,440,391	13,671,631	13,950,242
Mortgage loans on real estate.....	38,688,077	43,957,568	53,042,282
Agreements of sale of real estate.....	35,117	19,151	25,385
Real estate.....	3,822,715	3,945,503	4,375,467
Certificate loans and liens.....	8,350,108	8,937,063	9,577,773
Cash.....	3,216,114	2,474,153	2,000,889
Investment income, due and accrued.....	1,801,353	2,029,951	2,274,005
Outstanding premiums, contributions and dues.....	2,361,783	4,030,641	4,154,907
Other.....	267,917	359,695	849,326
<b>Liabilities and Surplus.....</b>	<b>213,233,586</b>	<b>237,202,293</b>	<b>261,079,632</b>
Actuarial reserve.....	155,452,383	171,368,498	189,112,743
Outstanding claims.....	1,913,277	2,330,707	2,607,084
Amounts on deposit.....	737,617	949,568	1,190,719
Other.....	32,110,490	36,372,983	40,504,582
Surplus.....	23,020,069	26,180,537	27,664,504
<b>Revenue.....</b>	<b>49,992,366</b>	<b>56,201,770</b>	<b>62,333,997</b>
Premiums, contributions and dues.....	39,285,596	44,130,100	48,858,947
Investment income.....	9,803,584	11,140,913	12,485,643
Other.....	903,186	930,757	989,407

<sup>1</sup> All funds, business in and out of Canada.

### 10.—Financial Statistics for Fraternal Benefit Societies under Federal Registration, 1963-65 —concluded

Item	1963	1964	1965
	\$	\$	\$
<b>Canadian Societies—concluded</b>			
<b>Expenditure</b> .....	<b>47,172,222</b>	<b>53,070,653</b>	<b>58,115,591</b>
Claims incurred.....	11,967,435	14,155,792	15,698,119
Increase in actuarial reserve.....	14,607,794	16,133,974	17,743,957
Taxes, licences and fees.....	113,634	151,596	155,010
Commissions.....	7,133,026	7,854,755	7,823,360
General expenses.....	8,404,755	9,070,597	9,915,848
Other.....	1,213,365	1,372,384	1,497,241
Dividends to members.....	2,976,584	3,619,031	3,931,950
Increase in provision for dividends to members.....	755,629	712,524	1,250,106
<b>Analysis of Increase in Surplus—</b>			
Excess of revenue over expenditure.....	2,820,144	3,131,117	4,218,406
Net capital gain on investments.....	87,248	36,733	—284,821
Other credits to surplus (net).....	85,535	281,842	113,118
Net increase in special reserves.....	—958,714	—269,307	—2,211,892
Increase in surplus.....	2,034,213	3,180,385	1,834,811
<b>Foreign Societies<sup>1</sup></b>			
<b>Assets</b> .....	<b>55,482,457</b>	<b>59,016,179</b>	<b>61,746,744</b>
Bonds.....	47,871,417	50,310,740	52,493,353
Stocks.....	464,750	577,785	744,055
Mortgage loans on real estate.....	1,350,869	2,121,033	2,109,674
Real estate.....			
Certificate loans and liens.....	2,832,371	3,044,439	3,213,760
Cash.....	2,062,798	2,023,143	2,209,887
Investment income, due and accrued.....	652,984	736,138	776,205
Outstanding premiums, contributions and dues.....	210,261	198,704	199,309
Other.....	7,007	4,197	501
<b>Liabilities</b> .....	<b>46,254,544</b>	<b>48,365,891</b>	<b>50,682,836</b>
Actuarial reserve.....	41,354,123	43,683,668	45,783,893
Outstanding claims.....	608,114	554,758	490,568
Other.....	4,392,307	4,127,465	4,408,375
<b>Revenue</b> .....	<b>10,443,354</b>	<b>11,460,668</b>	<b>11,349,054</b>
Premiums, contributions and dues.....	7,342,649	8,131,284	7,979,468
Investment income.....	2,393,765	2,776,840	2,798,603
Other.....	706,940	552,544	570,983
<b>Expenditure</b> .....	<b>5,828,623</b>	<b>6,617,272</b>	<b>6,648,293</b>
Claims incurred.....	3,791,696	3,845,952	4,103,095
Taxes, licences and fees.....	56,498	61,649	85,604
Commissions.....	592,104	553,551	572,346
General expenses.....	493,743	528,932	635,474
Other.....	297,437	965,606	517,870
Dividends to members.....	597,145	661,582	733,904

<sup>1</sup> All funds, business in Canada only.

#### Subsection 5.—Life Insurance Effected and in Force Outside Canada by Canadian Companies under Federal Registration

In this Subsection, there are given for the years 1964 and 1965 summary statistics of insurance effected and insurance in force at the end of the year in currencies other than Canadian dollars, as written by Canadian companies under federal registration. The data given are in terms of Canadian dollars, the conversions from the various foreign currencies having been made at the book rates of exchange used by the various companies.

Canadian life insurance companies operating under federal registration at Dec. 31, 1965 had life insurance in force amounting to \$19,899,066,560 in countries outside Canada. Insurance in force in currencies other than Canadian dollars amounted to \$19,864,473,020; the difference between these figures is presumably the net amount of business in countries outside Canada transacted in Canadian currency. The business in force in Canada of Canadian companies registered by the Federal Government amounted to \$47,900,424,908 at Dec. 31, 1965, and the total business on the books of these companies, in and out of

Canada, amounted to \$67,799,491,468. Thus, over 29 p.c. of the total business in force for Canadian companies registered by the Federal Government was in force in countries outside Canada. In connection with their business outside Canada, the Canadian life insurance companies registered by the Federal Government held, at the end of 1965, Commonwealth and foreign investments in the amount of \$3,669,015,685.

Approximately 71 p.c. of all business in force in currencies other than Canadian is in United States currency and 17 p.c. is in sterling. From a slightly different point of view, approximately 22 p.c. of this business in force is in currencies of Commonwealth countries other than Canada, and 78 p.c. in currencies of foreign countries.

**11.—Life Insurance Effectuated and in Force for Canadian Companies (excluding Fraternal Societies) under Federal Registration, in Currencies other than Canadian Dollars, by Currency, 1964 and 1965.**

Currency	1964		1965	
	Insurance Effectuated	Insurance in Force	Insurance Effectuated	Insurance in Force
	\$	\$	\$	\$
<b>Commonwealth Currencies.....</b>	<b>644,588,634</b>	<b>4,054,438,708</b>	<b>654,531,750</b>	<b>4,404,711,769</b>
Pounds—				
Sterling.....	476,073,299	3,147,811,111	501,510,690	3,399,227,461
Australia.....	24,100	27,160	—	30,018
British West Indies, Bahamas, Bermuda and Jamaica.....	50,657,789	238,132,904	60,984,116	292,926,807
Cyprus.....	676,272	11,093,774	—	10,326,192
Rhodesia.....	23,626,574	157,142,521	694,888	118,200,355
Zambia.....	—	—	—	20,034,925
Dollars—				
British Honduras.....	—	471,032	—	464,045
British West Indies, Guyana and Trinidad.....	89,301,478	406,109,127	88,482,621	473,364,700
Hong Kong.....	3,221,824	24,936,999	2,837,735	27,233,073
Malaysia.....	—	25,009,961	—	23,131,292
Rupees—				
Ceylon.....	—	23,506,940	—	21,822,522
India.....	—	3,733,161	—	3,342,719
Pakistan.....	—	500,128	—	430,909
Shillings—				
East Africa.....	1,007,298	15,963,890	21,700	14,176,751
<b>Foreign Currencies.....</b>	<b>2,105,393,904</b>	<b>13,995,728,792</b>	<b>2,527,556,280</b>	<b>15,459,761,251</b>
Bahts (Thailand).....	—	8,136	—	5,371
Bolivars (Venezuela).....	8,588,914	52,399,919	7,551,561	60,305,410
Colones (El Salvador).....	—	775,800	—	—
Cordobas (Nicaragua).....	—	1,613	—	1,613
Dollars (United States of America).....	1,901,473,923	12,699,524,536	2,330,966,688	14,060,258,975
Escudos (Chile).....	—	—	—	—
Francs (Belgium).....	—	1,904	—	656
Francs (France).....	—	385	—	33
Francs (Switzerland).....	260,800	260,800	89,500	286,900
Guilders (Netherlands).....	—	211,754	—	194,659
Guilders (Netherlands Antilles).....	4,095,270	23,445,746	3,228,509	24,702,993
Kyats (Burma).....	—	31,814	—	21,268
Pesos (Argentina).....	—	1,207,535	—	1,099,933
Pesos (Colombia).....	—	5,920	—	4,320
Pesos (Cuba).....	—	94,897,351	5,000	69,059,944
Pesos (Dominican Republic).....	17,135,117	46,435,908	5,025,057	44,938,046
Pesos (Mexico).....	1,000	2,693,728	1,000	2,359,025
Pesos (Philippines).....	16,033,240	92,429,818	18,695,150	103,721,717
Pounds (Egypt).....	—	8,426,217	—	7,532,489
Pounds (Republic of Ireland).....	23,224,772	116,589,646	25,081,965	133,531,472
Pounds (Israel).....	20,321,267	43,532,385	16,212,940	67,581,478
Rand (South Africa).....	114,259,601	812,731,635	120,698,910	894,092,924
Rupiahs (Indonesia).....	—	54,577	—	8,194
Soles (Peru).....	—	58,410	—	50,550
Yen (Japan).....	—	3,255	—	3,281
<b>Totals.....</b>	<b>2,749,982,533</b>	<b>18,050,167,500</b>	<b>3,182,088,030</b>	<b>19,864,473,020</b>



## Section 2.—Fire and Casualty Insurance

At the end of 1965 there were 261 companies registered by the Federal Government to transact fire insurance in Canada (84 Canadian, 67 British and 110 foreign). Of these companies, 254 (79 Canadian, 66 British and 109 foreign) were also registered to transact casualty insurance. In addition, 103 companies were registered by the Federal Government to transact casualty insurance but not fire insurance (28 Canadian, 7 British and 68 foreign). Of the companies registered to transact fire and/or casualty insurance, 81 were also registered to transact life insurance; 14 of these were registered for fire, life and casualty insurance and 67 for life and casualty but not fire insurance. It should be noted also that, in addition to the companies registered by the Federal Government to transact casualty insurance, there were 30 registered fraternal benefit societies transacting accident and sickness insurance, of which 28 also transacted life insurance.

The operations analysed in the tables of this Section, with the exception of Table 12, include only those companies under federal registration. As shown in Table 12, some fire and casualty insurance is transacted in Canada by companies that are provincially licensed only. These companies generally confine their operations to the province of incorporation and many of them are mutual organizations transacting only fire insurance on a county, municipal or parish basis. The table relates to insurance companies only; no data are included for fraternal benefit societies.

## 12.—Fire and Casualty Insurance Transacted in Canada, 1964 and 1965

Item	1964		1965	
	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred
	\$	\$	\$	\$
<b>Fire Insurance</b>				
Federally registered companies <sup>1</sup> .....	221,697,952	120,340,684	243,198,156	121,578,097
Provincial licensees.....	35,044,358	20,199,848	36,950,198	19,576,754
In province by which incorporated.....	31,794,472	17,893,125	33,459,873	17,545,784
Outside province by which incorporated.....	3,249,886	2,306,723	3,490,325	2,030,970
Lloyds, London.....	8,795,046	5,096,046	10,695,425	7,863,415
<b>Totals, Fire<sup>1</sup>.....</b>	<b>265,537,356</b>	<b>145,636,578</b>	<b>290,843,779</b>	<b>149,018,266</b>
<b>Casualty Insurance</b>				
Federally registered companies <sup>1</sup> .....	816,794,229	545,401,794	971,679,475	608,240,341
Provincial licensees.....	84,687,688	56,081,020	104,163,691	60,186,350
In province by which incorporated.....	74,056,133	48,915,407	91,979,346	51,749,586
Outside province by which incorporated.....	10,631,555	7,165,613	12,184,345	8,436,764
Lloyds, London.....	33,430,227	28,497,863	48,582,746	26,462,104
<b>Totals, Casualty<sup>1</sup>.....</b>	<b>934,918,144</b>	<b>629,980,677</b>	<b>1,124,425,912</b>	<b>694,888,795</b>
<b>Totals, Fire and Casualty<sup>1</sup>.....</b>	<b>1,200,455,500</b>	<b>775,617,255</b>	<b>1,415,269,691</b>	<b>843,907,061</b>

<sup>1</sup> Registered or licensed reinsurance deducted from all companies.

### Subsection 1.—Fire Insurance Transacted in Canada by Companies under Federal Registration

Net premiums written and net claims incurred during each year from 1956 to 1965 are given in Table 13 and the figures for 1965 are classified by province and nationality of company in Table 14.

#### 13.—Fire Insurance Transacted in Canada by Companies under Federal Registration, 1956-65

(Less all reinsurance for Canadian companies and registered or licensed reinsurance only for British and foreign companies)

Year	Net Premiums Written during Year	Net Claims Incurred during Year	Year	Net Premiums Written during Year	Net Claims Incurred during Year
	\$	\$		\$	\$
1956.....	155,506,787	86,088,850	1961.....	200,859,825	96,343,611
1957.....	156,246,117	109,757,161	1962.....	200,768,495	104,472,605
1958.....	177,364,450	88,151,837	1963.....	196,915,780	125,252,467
1959.....	196,702,991	96,054,754	1964.....	205,276,365	110,502,299
1960.....	200,735,958	100,501,460	1965.....	224,356,436	111,570,118

#### 14.—Fire Insurance in Canada classified by Province and by Nationality of Company under Federal Registration, 1965

(Registered or licensed reinsurance deducted)

Province or Territory	Canadian Companies		British Companies		Foreign Companies	
	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred
	\$	\$	\$	\$	\$	\$
Newfoundland.....	1,055,301	401,056	1,304,858	575,188	1,346,224	268,721
Prince Edward Island.....	375,053	71,385	456,031	181,859	186,879	65,558
Nova Scotia.....	3,406,072	1,189,679	3,154,724	1,227,455	1,917,401	667,515
New Brunswick.....	2,605,514	1,184,007	2,582,863	1,277,069	2,335,006	786,687
Quebec.....	29,187,022	13,830,323	21,644,460	13,328,667	28,986,594	14,970,917
Ontario.....	35,186,773	17,046,017	21,894,121	12,101,663	32,046,475	17,848,373
Manitoba.....	5,306,061	2,562,683	2,535,626	1,466,584	2,416,068	1,477,974
Saskatchewan.....	3,654,057	1,793,922	1,275,348	576,047	1,905,304	956,330
Alberta.....	6,026,029	3,096,761	3,701,708	1,762,388	3,370,868	2,052,317
British Columbia.....	7,973,164	3,257,262	6,094,045	1,854,711	8,737,382	3,479,624
Yukon and Northwest Territories...	144,707	61,346	292,420	124,062	93,998	33,947
<b>Canada.....</b>	<b>94,919,753</b>	<b>44,494,441</b>	<b>64,936,204</b>	<b>34,475,693</b>	<b>83,342,199</b>	<b>42,607,963</b>

## Subsection 2.—Fire Losses

The information in Tables 15 to 17, which deals with the loss of property and life caused by fire, has been summarized from the annual report *Fire Losses in Canada* prepared by the Dominion Fire Commissioner, Department of Public Works. Federal losses not included in these figures in 1964 amounted to \$2,866,472 from 1,792 fires; average federal losses for the period 1955-64 amounted to \$4,613,142 from an annual average of 2,182 fires.

## 15.—Statistics of Fire Losses, 1955-64

NOTE.—Figures for 1926-46 are given in the 1947 Year Book, p. 1078, and those for 1947-54 in the 1960 edition, p. 1169. Figures from 1922 may be obtained from the Dominion Fire Commissioner, Department of Public Works.

Year	Fires Reported	Property Loss <sup>1</sup>	Loss per Capita	Deaths by Fire	Year	Fires Reported	Property Loss <sup>1</sup>	Loss per Capita	Deaths by Fire
	No.	\$	\$	No.		No.	\$	\$	No.
1955.....	76,096	102,767,776	6.55	573	1960.....	79,611	129,327,288	7.24	566
1956.....	80,746	106,772,153	6.64	601	1961.....	83,706	128,262,047	7.03	556
1957.....	82,088	133,492,277	8.04	638	1962.....	85,585	140,144,643	7.55	626
1958.....	86,919	120,258,696	7.04	532	1963.....	83,027	154,051,629	8.15	553
1959.....	84,241	124,532,238	7.12	560	1964.....	75,306	148,376,961	7.71	603

<sup>1</sup> Excludes forest fires and Federal Government property losses.

The provincial property losses for 1961-64 given in Table 16 include both insured and uninsured losses.

## 16.—Fire Losses, by Province, 1961-64

Province or Territory	1961	1962	1963	1964		
	Property Loss <sup>1</sup>			Fires Reported	Property Loss <sup>1</sup>	Loss per Capita
	\$	\$	\$	No.	\$	\$
Newfoundland.....	5,535,260	1,026,077	3,368,293	343	1,249,077	5.54
Prince Edward Island.....	806,429	901,550	859,773	364	490,172	4.58
Nova Scotia.....	3,093,709	3,863,201	3,332,053	1,921	3,896,713	5.13
New Brunswick.....	3,667,612	3,155,172	4,529,053	1,750	4,285,010	6.94
Quebec.....	41,841,330	53,197,135	53,837,155	29,105	50,101,705	9.01
Ontario.....	40,773,492	43,509,265	52,421,532	22,290	48,930,025	7.43
Manitoba.....	4,884,668	6,184,097	6,806,691	3,850	6,438,740	6.72
Saskatchewan.....	4,741,201	2,799,614	4,701,317	2,196	5,329,669	5.65
Alberta.....	8,674,795	10,756,397	9,813,646	6,136	11,560,866	8.07
British Columbia.....	13,494,934	14,346,870	13,792,731	7,118	14,985,863	8.62
Yukon and Northwest Territories...	748,617	405,265	589,385	233	1,109,121	27.05
<b>Canada.....</b>	<b>128,262,047</b>	<b>140,144,643</b>	<b>154,051,629</b>	<b>75,306</b>	<b>148,376,961</b>	<b>7.71</b>

<sup>1</sup> Excludes forest fires and Federal Government property losses.



**17.—Fire Losses, by Type of Property and Cause of Fire, 1962-64**

Type of Property and Reported Cause of Fire	1962		1963		1964	
	Fires Reported	Property Loss <sup>1</sup>	Fires Reported	Property Loss <sup>1</sup>	Fires Reported	Property Loss <sup>1</sup>
	No.	\$	No.	\$	No.	\$
<b>Type of Property</b>						
Residential.....	62,353	39,414,601	50,040	39,413,018	53,396	39,674,160
Mercantile.....	7,077	44,406,083	16,470	52,487,306	6,543	43,439,189
Farm.....	6,413	14,331,437	6,088	14,366,579	5,418	14,779,996
Manufacturing.....	1,692	19,292,093	2,042	18,871,320	1,870	24,297,338
Institutional and assembly.....	1,148	8,494,594	1,242	10,459,249	1,245	12,129,277
Miscellaneous.....	6,902	14,205,835	7,145	18,454,157	6,834	14,057,001
<b>Totals.....</b>	<b>85,585</b>	<b>140,144,643</b>	<b>83,027</b>	<b>154,051,629</b>	<b>75,306</b>	<b>148,376,961</b>
<b>Reported Cause</b>						
Smokers' carelessness.....	31,637	7,448,721	28,500	9,359,174	23,156	8,245,166
Stoves, furnaces, boilers and smoke pipes.....	6,171	10,564,570	5,559	10,706,095	4,653	8,713,654
Electrical wiring and appliances.....	9,977	19,259,429	8,586	18,918,304	9,007	19,486,867
Matches.....	2,174	3,301,857	2,322	4,021,211	2,015	2,030,027
Defective and overheated chimneys and flues.....	2,562	2,929,994	2,240	2,790,044	1,911	2,133,072
Hot ashes, coals and open fires.....	1,449	1,353,921	1,309	1,250,543	1,290	1,531,309
Petroleum and its products.....	1,544	3,502,520	1,633	4,277,143	1,690	5,437,823
Lights, other than electric.....	1,730	2,403,166	1,518	3,842,748	1,380	3,050,987
Lightning.....	3,297	2,429,957	3,602	1,732,352	2,793	2,209,512
Sparks on roofs.....	314	392,756	255	350,180	249	328,782
Exposure fires.....	448	922,316	527	1,026,679	537	1,090,986
Spontaneous ignition.....	371	1,599,714	393	3,156,934	401	2,461,143
Incendiarism.....	720	3,106,214	782	4,747,611	992	7,159,986
Miscellaneous known causes (explo- sions, fireworks, friction, hot grease or metal, steam or hot water pipes, etc.).....	9,731	9,829,122	10,727	13,458,092	9,985	11,350,928
Unknown.....	13,451	71,100,386	15,074	74,414,519	15,247	73,146,719

<sup>1</sup> Excludes forest fires and Federal Government property losses.**Subsection 3.—Casualty Insurance Transacted in Canada by Companies under Federal Registration**

The various classes of casualty insurance are shown in Table 18. These figures relate only to companies registered by the Federal Government.

**18.—Net Casualty Premiums Written, Premiums Earned and Claims Incurred in Canada, 1965**

NOTE.—Excluding marine insurance for which a certificate of registration is not required. Less all reinsurance for Canadian companies and registered or licensed reinsurance only for British and foreign companies.

Class of Insurance	Premiums Written				Premiums Earned	Claims Incurred
	Canadian Companies	British Companies	Foreign Companies	Total	All Companies	All Companies
	\$	\$	\$	\$	\$	\$
Aircraft.....	445,246	3,232,448	2,041,404	5,719,098	5,816,696	4,529,251
Automobile.....	240,780,361	101,353,850	145,160,305	487,294,516	446,229,252	300,038,707
Boiler—						
Boiler.....	4,032,315	1,311,336	2,005,488	7,349,139	6,559,553	1,714,016
Machinery.....	1,600,956	311,486	897,161	2,809,603	3,012,925	2,493,596
Credit.....	279,620	—	747,042	1,026,662	942,990	283,300
Earthquake.....	32,265	28,432	83,469	144,166	121,952	872
Explosion.....	22	—	119	135	138	9,627
Forgery.....	86,530	10,510	100,173	197,213	165,147	26,815

**18.—Net Casualty Premiums Written, Premiums Earned and Claims Incurred  
in Canada, 1965—concluded**

Class of Insurance	Premiums Written				Premiums Earned	Claims Incurred
	Canadian Companies	British Companies	Foreign Companies	Total	All Companies	All Companies
	\$	\$	\$	\$	\$	\$
Guarantee—						
Fidelity.....	1,876,792	998,092	3,362,073	6,236,957	5,522,373	2,220,742
Surety.....	6,446,955	1,065,940	9,510,816	17,023,741	14,419,112	1,710,589
Hail.....	255,258	1,065,515	5,048,723	6,369,496	6,386,059	2,076,238
Inland transportation.....	1,912,177	1,789,827	4,400,756	8,102,760	7,931,030	4,513,115
Liability—						
Public liability.....	18,119,285	11,877,571	15,624,953	45,621,809	43,192,906	24,811,021
Employers' liability.....	2,955,376	2,838,893	1,965,162	7,759,431	7,458,398	3,279,824
Livestock.....	—21,762	206,773	112,332	297,343	406,445	134,747
Mortgage.....	1,339,188	—	—	1,339,188	172,526	—
Personal accident and sickness.....	135,703,394	7,268,554	137,414,319	280,386,267	276,618,097	212,376,610
Personal property.....	20,094,516	15,392,725	24,771,807	60,259,048	55,330,817	30,431,670
Plate glass.....	1,277,719	784,905	791,254	2,853,878	2,858,836	1,716,188
Real property.....	670,903	612,492	1,057,518	2,340,913	2,277,301	1,115,616
Sprinkler leakage.....	115	50	19	184	414	—
Theft.....	3,499,043	2,309,234	3,238,888	9,047,165	8,545,292	3,632,144
Title.....	—	—	106,689	106,689	97,417	750
Water damage.....	—	—	294	294	651	—
Weather.....	—	—3	—2,652	—2,655	—2,646	—16
Windstorm.....	80,856	153	10,221	91,230	94,819	69,595
<b>Totals.....</b>	<b>441,467,160</b>	<b>152,458,777</b>	<b>358,448,333</b>	<b>952,374,270</b>	<b>894,158,500</b>	<b>597,185,017</b>

**Subsection 4.—Finances of Companies Transacting Fire and Casualty  
Insurance under Federal Registration**

The financial statistics of Tables 19 and 20 relate to fire and casualty insurance transacted by companies under federal registration. The figures for British and foreign companies apply to their assets, liabilities and operations in Canada only. On the other hand, the assets and liabilities, revenue and expenditure of Canadian companies are given for total business, including business arising out of Canada as well as in Canada.

**19.—Total Assets and Liabilities for Fire and Casualty Insurance of Canadian Companies and Assets and Liabilities in Canada for Fire and Casualty Insurance of British and Foreign Companies under Federal Registration, 1963-65.**

Assets and Liabilities	1963	1964	1965
	\$	\$	\$
<b>Canadian Companies<sup>1</sup></b>			
<b>Total Assets<sup>2</sup></b> .....	<b>670,134,567</b>	<b>769,673,574</b>	<b>870,501,556</b>
Bonds.....	407,598,291	463,897,562	515,489,370
Stocks.....	85,617,906	100,881,261	121,517,056
Mortgage loans and agreements of sale.....	25,109,780	29,361,494	33,319,405
Real estate.....	17,667,485	18,653,012	17,627,140
Cash.....	33,532,050	37,351,588	47,329,785
Investment income, due and accrued.....	5,352,097	6,157,609	6,856,043
Amounts due from agents and uncollected premiums.....	53,937,900	68,265,253	78,250,503
Other assets.....	42,616,032	45,712,443	54,080,065
Adjustment for excess of book value over market value.....	—1,297,004	—606,653	—3,967,811
<b>Total Liabilities</b> .....	<b>467,485,957</b>	<b>548,131,659</b>	<b>625,039,806</b>
Reserve for unearned premiums.....	174,334,754	203,254,897	233,316,991
Additional policy reserves.....	5,016,907	6,454,497	7,976,935
Provision for unpaid claims.....	168,480,924	207,542,187	242,846,584
Investment, contingency or general reserves.....	30,966,302	32,801,075	33,248,079
Other liabilities.....	88,687,070	98,079,003	107,651,217
<b>Capital stock paid</b> .....	<b>44,375,673</b>	<b>48,788,196</b>	<b>50,511,505</b>
<b>Amount transferred from other funds</b> .....	<b>8,306,753</b>	<b>12,060,250</b>	<b>13,713,473</b>
<b>Surplus</b> .....	<b>149,966,184</b>	<b>160,693,469</b>	<b>181,236,772</b>

For footnotes, see end of table, p. 1160.

**19.—Total Assets and Liabilities for Fire and Casualty Insurance of Canadian Companies and Assets and Liabilities in Canada for Fire and Casualty Insurance of British and Foreign Companies under Federal Registration, 1963-65—concluded.**

Assets and Liabilities	1963	1964	1965
	\$	\$	\$
<b>British Companies<sup>1</sup></b>			
<b>Assets in Canada<sup>1</sup></b> .....	<b>338,418,407<sup>2</sup></b>	<b>353,827,288<sup>2</sup></b>	<b>371,038,935</b>
Bonds.....	258,982,825	256,569,395	264,296,214
Stocks.....	22,808,165	30,537,041	38,019,157
Mortgage loans and agreements of sale.....	2,301,573	2,129,368	3,673,701
Real estate.....	2,988,247 <sup>2</sup>	3,373,858 <sup>2</sup>	3,844,001
Cash.....	10,730,119	12,389,194	11,205,618
Investment income, due and accrued.....	2,579,229	2,616,060	2,868,406
Amounts due from agents and uncollected premiums.....	30,153,580	34,711,199	35,574,013
Other assets.....	7,874,669	11,501,173	11,557,825
<b>Liabilities in Canada</b> .....	<b>221,486,435</b>	<b>241,327,983</b>	<b>250,764,617</b>
Reserve for unearned premiums.....	106,632,996	111,801,728	114,971,031
Additional policy reserves.....	978,142	1,169,676	1,261,987
Provision for unpaid claims.....	96,639,173	106,316,358	114,495,087
Other liabilities.....	17,236,124	22,040,221	20,036,542
Excess of assets over liabilities in Canada.....	116,931,972 <sup>2</sup>	112,499,305 <sup>2</sup>	120,274,288
<b>Foreign Companies<sup>3</sup></b>			
<b>Assets in Canada<sup>1</sup></b> .....	<b>521,527,193</b>	<b>532,724,871</b>	<b>587,450,695</b>
Bonds.....	415,317,758	422,572,234	456,687,718
Stocks.....	16,977,526	18,273,361	22,324,100
Mortgage loans and agreements of sale.....	49,739	70,973	60,459
Real estate.....	4,436,436	4,734,626	4,720,163
Cash.....	28,273,412	28,731,906	31,468,188
Investment income, due and accrued.....	4,934,524	5,182,547	5,924,430
Amounts due from agents and uncollected premiums.....	35,810,861	38,265,609	47,265,707
Other assets.....	15,726,937	14,893,615	18,999,930
<b>Liabilities in Canada</b> .....	<b>342,939,576</b>	<b>366,353,590</b>	<b>427,601,557</b>
Reserve for unearned premiums.....	166,808,432	173,536,362	201,488,734
Additional policy reserves.....	7,601,327	8,246,507	10,219,696
Provision for unpaid claims.....	134,248,709	147,522,090	175,464,666
Other liabilities.....	34,281,108	37,048,631	40,428,561
Excess of assets over liabilities in Canada.....	178,587,617	166,371,281	159,849,138

<sup>1</sup> Business in and out of Canada.<sup>2</sup> At book values. The amount, if any, by which the total book value of bonds, stocks and real estate exceeds the total market value is shown separately as a deduction to assets.<sup>3</sup> Business in Canada only.<sup>4</sup> At market values.

**20.—Underwriting Account and Analysis of Surplus of Canadian Companies and Underwriting Account and Investment Income in Canada of British and Foreign Companies Transacting Fire and Casualty Insurance under Federal Registration, 1964 and 1965.**

Item	1964	1965
	\$	\$
<b>Canadian Companies (In and Out of Canada)</b>		
<b>Underwriting Account—</b>		
Underwriting income earned.....	478,282,668	567,078,185
Less disbursements:		
Claims incurred.....	330,744,557	372,623,948
Commissions and general expenses.....	157,868,046	180,853,109
Premium taxes, licences and fees.....	11,411,150	13,764,111
Dividends to policyholders.....	4,965,477	4,154,423
Underwriting gain or loss (—).....	—26,706,562	—4,317,406
<b>Analysis of Increase in Surplus—</b>		
Underwriting gain or loss (—).....	—26,706,562	—4,317,406
Investment income.....	27,658,070	32,575,235
Other investment account items.....	5,321,858	—1,178,450
Income taxes.....	—1,859,443	—5,273,413
Dividends to shareholders.....	—3,407,122	—4,757,992
Other surplus items.....	—1,044,811	—1,801,400
Premium on capital stock or surplus paid in.....	11,849,177	7,472,155
Increase in surplus.....	11,811,167	22,718,729



**20.—Underwriting Account and Analysis of Surplus of Canadian Companies and Underwriting Account and Investment Income in Canada of British and Foreign Companies Transacting Fire and Casualty Insurance under Federal Registration, 1964 and 1965—concluded.**

Item	1964	1965
	\$	\$
<b>British Companies</b>		
<b>Underwriting Account in Canada—</b>		
Underwriting income earned.....	196,047,928	214,202,897
Less disbursements:		
Claims incurred.....	124,428,836	126,098,049
Commissions and general expenses.....	82,490,780	85,113,232
Premium taxes, licences and fees.....	4,784,820	5,157,579
Dividends to policyholders.....	1,800	—
Underwriting gain or loss (—).....	—15,658,308	—2,165,963
Income taxes.....	64,605	30,087
Investment income.....	10,943,710	11,747,706
<b>Foreign Companies</b>		
<b>Underwriting Account in Canada—</b>		
Underwriting income earned.....	363,692,723	412,644,927
Less disbursements:		
Claims incurred.....	241,573,050	266,600,689
Commissions and general expenses.....	119,436,460	129,107,737
Premium taxes, licences and fees.....	8,822,383	10,031,897
Dividends to policyholders.....	6,806,665	4,153,930
Underwriting gain or loss (—).....	—12,945,835	2,750,674
Income taxes.....	1,250,689	2,752,162
Investment income.....	20,161,637	22,046,067

### Section 3.—Government Insurance

#### Federal Government Insurance

For more than fifty years the Federal Government has operated an annuity service, instituted to assist Canadians to make provision for old age; this service is described below. In addition, various insurance schemes have been adopted in recent years by the Federal Government or co-operatively by the federal and provincial governments. Information on unemployment insurance, health insurance, veterans insurance, export credits insurance, etc., will be found in the appropriate Chapters on Labour, Health and Welfare, Foreign Trade, etc.

**Government Annuities.\***—The Government Annuities Act (RSC 1952, c. 132) was passed in 1908 and is administered by the Minister of Labour.

A Canadian Government annuity is a fixed yearly income purchased from and paid by the Government of Canada. The annuity is payable in monthly instalments for life, or for life and guaranteed for a period of years. The minimum annuity is \$10 and the maximum \$1,200 a year or the actuarial equivalent if the annuity is to reduce by the amount of payments under the Old Age Security Act. Annuity contracts may be deferred or immediate. Deferred annuities are purchased by periodic or single premiums. Immediate annuity contracts provide immediate income. Annuities may be arranged to reduce by \$75 a month when payments under the Old Age Security Act begin.

The property and interest of the annuitant are neither transferable nor attachable. In the event of the death of the annuitant before a deferred annuity vests, all money paid is refunded with interest. Provision is made in the Act for group annuity contracts whereby employers may contract for the purchase of annuities on behalf of their employees, or associations on behalf of their members, the purchase money being derived partly from wages and partly from employer contributions or entirely from employer contributions.

\* Revised in the Government Annuities Branch, Department of Labour, Ottawa.

Annuities arising from individual contracts may be taxable in either of two ways: (1) if registered under Sect. 79B of the Income Tax Act for tax exemption on premiums, the annuity is fully taxable, or (2) if not registered, the annuity is taxable on the interest portion only. Annuities arising from registered pension plans are fully taxable but the employee and the employer are entitled to tax exemption year by year on their annual contributions to the pension plan.

From Sept. 1, 1908, the date of the inception of the system, to Mar. 31, 1966, the total number of annuity contracts and certificates issued, excluding replacements, was 542,163. On the latter date, 96,350 annuities were being paid amounting to \$55,640,684 annually and 288,752 deferred annuities were being purchased. The net total amount of purchase money received up to Mar. 31, 1966 was \$1,436,051,060. At that date there were in force 1,267 pension plans underwritten by government annuities, providing 200,498 employees with portable pensions; approximately 30,000 retired employees were receiving pensions. The number of certificates issued during the year was 1,979 compared with 1,783 in 1964-65.

**21.—Individual Annuity Contracts and Certificates Issued and Net Receipts, Years Ended Mar. 31, 1962-66, with Cumulative Totals**

Year Ended Mar. 31—	Individual Contracts Issued	Group Certificates Issued	Total Contracts and Certificates Issued	Net Receipts
	No.	No.	No.	\$'000
1909-61.....	196,184	309,520	505,704	1,270,359
1962.....	4,117	7,480	11,597	43,097
1963.....	4,296	3,687	7,983	37,003
1964.....	3,687	2,470	6,157	28,894
1965.....	3,817	1,783	5,600	29,583
1966.....	3,143	1,979	5,122	27,114
<b>Totals, 1909-66.....</b>	<b>215,244</b>	<b>326,919</b>	<b>542,163</b>	<b>1,436,051</b>

**22.—Government Annuity Account Statements, Years Ended Mar. 31, 1962-66**

Item	1962	1963	1964	1965	1966
	\$	\$	\$	\$	\$
<b>Assets</b>					
Fund at beginning of fiscal year.....	1,199,122,929	1,235,303,906	1,264,436,143	1,284,261,927	1,303,136,883
Receipts during the year, less payments.....	36,180,977	29,132,237	19,825,784	18,874,956	13,943,135
Fund at end of fiscal year.....	1,235,303,906	1,264,436,143	1,284,261,927	1,303,136,883	1,317,080,018
<b>Liabilities</b>					
Value of outstanding contracts.....	1,235,303,906	1,264,436,143	1,284,261,927	1,303,136,883	1,317,080,018
<b>Receipts</b>					
Immediate annuities.....	2,465,933	1,468,984	1,054,824	4,531,333	4,471,973
Deferred annuities.....	41,007,852	36,063,164	28,358,312	25,631,120	23,146,947
Interest on fund.....	46,010,743	47,414,303	48,376,632	49,180,085	50,048,246
<b>Totals, Receipts.....</b>	<b>89,484,528</b>	<b>84,946,451</b>	<b>77,789,768</b>	<b>79,342,538</b>	<b>77,667,166</b>

**22.—Government Annuity Account Statements, Years Ended Mar. 31, 1962-66—concluded**

Item	1962	1963	1964	1965	1966
	\$	\$	\$	\$	\$
<b>Payments</b>					
Payments under vested annuity contracts.....	46,927,513	48,854,763	50,556,551	52,870,629	55,183,304
Return of premiums with interest.....	5,189,647	5,538,438	5,626,034	5,982,052	6,120,656
Return of premiums without interest.....	872,639	961,182	875,581	876,543	826,265
Unclaimed annuities transferred to Consolidated Revenue Fund, net.....	21,179	42,531	27,345	42,979	92,122
Surplus transferred to Consolidated Revenue Fund.....	292,573	417,300	878,443	695,379	1,501,684
<b>Totals, Payments.....</b>	<b>53,303,551</b>	<b>55,814,214</b>	<b>57,963,984</b>	<b>60,467,582</b>	<b>63,724,031</b>

**23.—Numbers and Values of Annuity Contracts, as at Mar. 31, 1965 and 1966**

Classification	1965			1966		
	Contracts	Amount of Annuities	Value at Mar. 31 of Contracts in Force	Contracts	Amount of Annuities	Value at Mar. 31 of Contracts in Force
	No.	\$	\$	No.	\$	\$
Vested ordinary.....	45,884	21,031,124	166,120,071	47,330	21,888,688	171,184,200
Vested guaranteed.....	35,648	20,494,807	218,099,866	36,838	21,279,204	224,815,427
Vested last survivor.....	3,497	1,880,943	22,199,191	3,407	1,843,030	21,567,391
Vested reducing at Old Age Security age.....	8,313	9,781,761	63,164,829	8,775	10,629,762	64,759,573
Deferred.....	295,672	<sup>1</sup>	833,552,926	288,752	<sup>1</sup>	834,753,427
<b>Totals.....</b>	<b>389,014</b>	<b>53,188,635</b>	<b>1,303,136,883</b>	<b>385,102</b>	<b>55,640,684</b>	<b>1,317,080,018</b>

<sup>1</sup> Undetermined.**Provincial Government Insurance**

**Saskatchewan.**—The Saskatchewan Government Insurance Office, a Crown corporation established by the Saskatchewan Government Insurance Act, 1944, commenced business in May 1945. It deals in all types of insurance other than sickness and life. The aim of the legislation is to provide residents of the province with low-cost insurance designed for their particular needs. Rates are based on loss experience in Saskatchewan only and the surplus is invested, to the extent possible, within the province. Premium income for 1965 amounted to \$10,938,740 and earned surplus to \$556,767. The total amount made available to the Government of Saskatchewan from 1945 to Dec. 31, 1965 was \$5,542,769. Assets at the latter date were \$22,593,871, of which \$13,700,000 were invested in bonds and debentures issued by Saskatchewan schools, municipalities, hospitals and the province. Independent insurance agents numbering 606 sell government insurance throughout the province.

The Automobile Accident Insurance Act, which became effective Apr. 1, 1946, is administered by the Saskatchewan Government Insurance Office. It establishes a compulsory automatic insurance plan designed to provide a reasonable minimum of compensation for losses arising from motor vehicle accidents regardless of fault. It also provides public liability insurance, with an inclusive limit of \$35,000 for bodily injury and property damage, as well as comprehensive and collision coverage subject to a \$200 deductible for private passenger cars. Rates vary from \$4 a year for older farm trucks to \$67 for late-model private passenger cars, and also vary for other types of motor vehicles depending on size and usage. From the inception of the Act in 1946 to Dec. 31, 1965 more than \$94,000,000 was paid in claims.



The Saskatchewan Government Insurance Office, under contract with the Saskatchewan Department of Natural Resources, offers insurance to farmers covering damage to unharvested crops by certain wildlife such as ducks, geese, sandhill cranes, deer, elk, bear and antelope.

Information regarding the operation of the Saskatchewan Government Insurance Office or the Automobile Accident Insurance Act may be obtained from the Office Librarian, Saskatchewan Government Insurance Office, Regina, Sask.

**Alberta.**—Provincial government insurance in Alberta, coming within the purview of the Alberta Insurance Act, relates (1) to the Alberta General Insurance Company, in which the entire business of the fire branch of the Alberta Government Insurance Office was vested by the Legislature on Mar. 31, 1948, and (2) to the Life Insurance Company of Alberta, which was constituted on the same date to take over the life branch of the Alberta Government Insurance Office. Each company is administered by a separate board of directors. The Lieutenant-Governor in Council appoints the members to the respective boards but the charter of the Life Insurance Company of Alberta provides for the election of two policyholder directors. Although both companies are Crown corporations, they are not entitled to the usual immunities of the Crown, since they may sue and be sued in any court of competent jurisdiction.

A variety of agencies in Alberta offer forms of prepaid protection corresponding to insurance but the nature of the enabling legislation governing these plans emphasizes the fact that they do not constitute insurance. Because such exemptions are specifically provided by the insurance laws of the province, reference to these plans is necessary only to make it clear that they do not come within the scope of the Alberta Insurance Act. It should be noted that the Alberta Hail Insurance Act is administered by the Provincial Treasurer but none of the provisions of the Alberta Insurance Act apply to the Alberta Hail Insurance Board.

Further information on provincial insurance matters may be obtained from the Superintendent of Insurance, Department of the Provincial Secretary, Edmonton, Alta.

### Section 4.—Pension Plans

Very few pension plans in Canada have been in existence for more than 25 years and most of the older plans were installed by governments and financial institutions, such as banks. Employers in industry began showing an interest in pension plans for their employees shortly before World War II and from that time on there was a rapid increase in the rate at which plans were introduced.

Up to 1948 the majority of employers made arrangements with either the Annuities Branch of the Department of Labour (see pp. 1161-1163) or an insurance company for the underwriting of their plans. Then began the use of the facilities of corporate trustees (trust companies) to handle pension moneys, and by 1953 the amount of funds under control of such trustee plans had become a significant factor in the capital market and a growing form of savings. Trustee pension funds are also managed by individual trustees appointed by the employer or through a Pension Fund Society, which is a body incorporated under federal or provincial pension fund societies Acts, companies Acts, etc.

Table 24 shows the distribution of pension business for the years 1961-65.

#### 24.—Distribution of Pension Business between Trusteed Funds, Life Insurance Company Annuities and Government Annuities, 1961-65

Item and Year		Trusteed Pension Plans	Life Insurance Group Annuities	Federal Government Group Annuities
<b>Plans—</b>				
1961.....	No.	1,363	7,305	1,513
1962.....	"	1,547	8,276	1,437
1963.....	"	1,805	9,276	1,365
1964.....	"	2,119	10,048	1,312
1965.....	"	2,998	10,866	1,267
<b>Plan Members—</b>				
1961.....	No.	1,080,646	501,060	174,000
1962.....	"	1,130,521	536,886	161,090
1963.....	"	1,257,434	560,539	155,586
1964.....	"	1,336,542	570,925	149,026
1965.....	"	1,471,888	580,984	141,579
<b>Contributions—</b>				
1961.....	\$'000,000	436	157	25
1962.....	"	472	172	20
1963.....	"	541	178	13
1964.....	"	597	207	10
1965.....	"	678	217	7
<b>Assets (book value)—</b>				
1961.....	\$'000,000	4,074	1,397	610
1962.....	"	4,573	1,606	625
1963.....	"	5,175	1,818	623
1964.....	"	5,820	2,049	615
1965.....	"	6,600	2,321	634

Pension trust funds derive their income from employer and employee contributions, investment income and profit on the sale of securities. Expenditures arise from pension payments, pensions purchased from an underwriter on retirement or separation, cash withdrawals on death or separation, administrative costs and losses on the sale of securities. The funds are invested in federal, provincial, municipal and corporate bonds, stocks, mortgages, real estate and lease-backs. In recent years corporate trustees have introduced the "pooled" or "classified" type of fund, which enables small plans to have their assets combined so that each fund participates in the diversity, security and yield previously available only to the much larger single funds. The trustees of a fund, whether corporate or individuals, may also purchase mutual funds.

Table 25 shows the various types of trusteed funds and the income, expenditures and assets of the funds in 1962-65.

#### 25.—Trusteed Pension Plans, Income, Expenditures and Assets, 1962-65

Item		1962	1963	1964	1965
<b>Trusteed plans.....</b>					
Funded Trusts—	No.	1,547	1,805	2,119	2,998
(a) Corporate trustees.....	"	1,256	1,487	1,732	2,306
(b) Individual trustees.....	"	230	251	381	626
(c) Combinations of (a) and (b) and other.....	"	25	29	29	32
Pension fund societies.....	"	33	33	37	34
Pooled funds.....	"	883	1,110	1,318	1,846
Mutual funds.....	"	38	58	90	133
Contributory funds.....	"	1,144	1,340	1,594	2,087
Non-contributory funds.....	"	403	465	625	911
Non-retired employees covered.....	'000	1,131	1,257	1,337	1,472

**25.—Trusteed Pension Plans, Income, Expenditures and Assets, 1962-65—concluded**

Item	1962	1963	1964	1965
<b>Income—</b>				
Total contributions..... \$'000,000	472	541	597	678
Employer..... "	271	317	343	407
Employee..... "	201	224	249	271
Investment..... "	206	237	273	309
Net profit on sale of securities..... "	6	9	9	11
Other..... "	3	5	3	7
<b>Totals, Income..... \$'000,000</b>	<b>687</b>	<b>792</b>	<b>882</b>	<b>1,005</b>
<b>Expenditures—</b>				
Pension payments out of funds..... \$'000,000	135	151	170	197
Cost of pensions purchased..... "	6	4	8	8
Cash withdrawals..... "	42	47	54	85
Administration costs..... "	2	3	4	5
Net loss on sale of securities..... "	6	3	4	2
Other expenditures..... "	2	3	8	7
<b>Totals, Expenditures..... \$'000,000</b>	<b>193</b>	<b>211</b>	<b>243</b>	<b>304</b>
<b>Assets (book value)—</b>				
Investment in pooled funds..... \$'000,000	173	239	324	428
Investment in mutual funds..... "	44	49	58	32
<b>Bonds..... \$'000,000</b>	<b>3,292</b>	<b>3,618</b>	<b>3,908</b>	<b>4,230</b>
Bonds of, or guaranteed by, Government of Canada..... "	609	532	551	513
Bonds of, or guaranteed by, provincial governments..... "	1,482	1,674	1,868	2,021
Bonds of Canadian municipal governments, school boards, etc..... "	467	546	593	656
Other Canadian..... "	731	813	893	1,035
Non-Canadian..... "	3	3	3	5
<b>Stocks..... \$'000,000</b>	<b>499</b>	<b>614</b>	<b>779</b>	<b>994</b>
Canadian, common..... "	404	499	627	796
Canadian, preferred..... "	18	20	19	29
Non-Canadian, common..... "	77	95	133	169
<b>Mortgages..... \$'000,000</b>	<b>417</b>	<b>482</b>	<b>545</b>	<b>626</b>
Insured residential (NHA)..... "	278	324	353	387
Other..... "	139	158	192	239
<b>Real estate and lease-backs..... \$'000,000</b>	<b>34</b>	<b>40</b>	<b>42</b>	<b>44</b>
Accrued interest..... "	42	45	50	56
Accounts receivable..... "	24	27	31	32
Cash-currency, bank and other deposits..... "	47	61	79	156
Other assets..... "	1	—	4	2
<b>Totals, Assets..... \$'000,000</b>	<b>4,573</b>	<b>5,175</b>	<b>5,820</b>	<b>6,600</b>



## CHAPTER XXVI.—DEFENCE

### CONSPECTUS

	PAGE		PAGE
<b>Part I.—The Armed Services and Defence Research.....</b>	<b>1167</b>	<b>SECTION 4. SERVICES COLLEGES AND STAFF TRAINING COLLEGES.....</b>	<b>1178</b>
SECTION 1. THE DEPARTMENT OF NATIONAL DEFENCE.....	1167	<b>SECTION 5. THE DEFENCE RESEARCH BOARD</b>	<b>1180</b>
SECTION 2. THE COMMAND STRUCTURE OF THE CANADIAN FORCES.....	1172	<b>Part II.—Defence Production.....</b>	<b>1181</b>
SECTION 3. OPERATIONS AND TRAINING OF THE CANADIAN FORCES.....	1173	<b>Part III.—Civil Emergency Planning (Civil Defence).....</b>	<b>1183</b>

*The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.*

## PART I.—THE ARMED SERVICES AND DEFENCE RESEARCH\*

### Section 1.—The Department of National Defence

The control and management of all matters relating to national defence, the Canadian Forces and the Defence Research Board are the responsibility of the Minister and Associate Minister of National Defence; the duties and functions relating to national survival have also been assigned to the Department of National Defence with the Canadian Army undertaking the major role.

Effective Aug. 1, 1964, the Headquarters of the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force were integrated to form a single Canadian Forces Headquarters (CFHQ) under a single Chief of Defence Staff. The role of CFHQ is to provide military advice to the Minister of National Defence and to control and administer the Canadian Forces.

CFHQ is organized in four functional Branches headed by the Vice-Chief of Defence Staff, the Chief of Personnel, the Chief of Technical Services and the Comptroller General, who are responsible for advising and supporting the Chief of Defence Staff in matters relating to their assigned spheres of activity. The Defence Research Board conducts research relating to the defence of Canada and also undertakes the development of or improvements in materiel.

The civilian administration of the Department is organized under the Deputy Minister and is constituted on a functional basis. The Deputy Minister, assisted by an Associate Deputy Minister, maintains a continuing review and control over the financial aspects of operational policy, logistics, and personnel and administration. Three Assistant Deputy

\* Prepared (December 1966) in the Office of the Deputy Minister, Department of National Defence, Ottawa.

Ministers each administers a division of the Deputy Minister's Branch responsible for personnel, logistics and finance. Also responsible to the Deputy Minister are the Judge Advocate General, the Departmental Secretary and the Director of Information Services.

The Defence Council meets at regular intervals to consider and advise on major policy matters. The Council consists of: the Minister of National Defence as Chairman; the Associate Minister of National Defence as Vice-Chairman; and the Parliamentary Assistant to the Minister of National Defence, the Deputy Minister of National Defence, the Chief of Defence Staff, the Chairman of the Defence Research Board, the Vice-Chief of Defence Staff as members and a Secretary.

**Liaison in Other Countries.**—The Chief of Defence Staff, who is the Canadian military representative to the North Atlantic Treaty Organization, is responsible for advice on all NATO military matters and acts as a military adviser to Canadian NATO delegations. For purposes of liaison and the furtherance of international co-operation in defence, Canada also maintains: (1) the Canadian Defence Liaison Staff London, representing the Canadian Armed Forces and the Defence Research Board in Britain, the Chairman of which is the principal military adviser to the Canadian High Commissioner in London; (2) the Canadian Defence Liaison Staff Washington, representing the Canadian Armed Forces and the Defence Research Board in the United States, the Chairman of which is the principal military adviser to the Canadian Ambassador in Washington, the Canadian National Liaison Representative to SACLANT Headquarters, and the Canadian member of the NATO Military Committee in Permanent Session; (3) in Paris, a Military Adviser to the Canadian Permanent Representative to the North Atlantic Council and also a Canadian National Military Representative to SHAPE; and (4) Service Attachés in various countries throughout the world. In addition, a number of defence matters of concern to both Canada and the United States are considered by the Permanent Joint Board on Defence, which provides advice on such matters to the respective governments.

**Canada-United States Committee on Joint Defence.**—This Committee is composed of: for Canada, the Secretary of State for External Affairs, the Minister of National Defence and the Minister of Finance; for the United States, the Secretary of State, the Secretary of Defense and the Secretary of the Treasury; together with such other Cabinet members as either government may designate from time to time. Its function is to consult periodically on any matters affecting the joint defence of Canada and the United States; to exchange information and views at the ministerial level on problems that may arise, with a view to strengthening further the close co-operation between the two governments on joint defence matters; and to report on such discussions in order that consideration may be given to measures deemed appropriate and necessary to improve defence co-operation. Meetings normally alternate between Canada and the United States with the host country providing the chairman.

**Mutual Aid.**—Canada's contributions to NATO are outlined on p. 177.

**Rates of Pay Issuable to Canadian Forces.**—The entire pay structure for comparable ranks in the three Services is on a uniform basis. Tables 1 and 2 contain the monthly rates of pay for officers and men, respectively, effective Oct. 1, 1966. Equivalent ranks for the Navy, Army and Air Force are listed following Table 2.

1.—Monthly Rates of Pay for Officers of the Canadian Armed Forces,  
Effective Oct. 1, 1966

Army Rank and Equivalent <sup>1</sup>	Basic	Incentive Pay Category <sup>2</sup>							
		1	2	3	4	5	6	7	8
OFFICERS OTHER THAN PILOTS, RADIO NAVIGATORS, MEDICAL, DENTAL AND LEGAL									
	\$	\$	\$	\$	\$	\$	\$	\$	\$
2nd Lieutenant.....	355 <sup>3</sup>	...	...	...	...	...	...	...	...
Lieutenant.....	540	580	595	...	...	...	...	...	...
Lieutenant commissioned from the ranks.....	645	665	685	705	725	...	...	...	...
Captain.....	697	722	747	772	797	822	847	...	...
Major.....	893	923	953	983	1,013	1,043	...	...	...
Lieutenant-Colonel.....	1,084	1,119	1,154	1,189	1,224	...	...	...	...
Colonel.....	1,349	1,394	1,439	...	...	...	...	...	...
Brigadier.....	1,609	1,659	1,709	...	...	...	...	...	...
Major-General.....	1,904	...	...	...	...	...	...	...	...
Lieutenant-General.....	2,084	...	...	...	...	...	...	...	...
PILOTS									
	\$	\$	\$	\$	\$	\$	\$	\$	\$
Lieutenant.....	686	751	766	...	...	...	...	...	...
Lieutenant commissioned from the ranks.....	808	833	868	903	938	...	...	...	...
Captain.....	854	884	924	964	1,004	1,044	1,084	1,104	1,124
Major.....	1,072	1,102	1,132	1,162	1,192	1,222	...	...	...
Lieutenant-Colonel.....	1,234	1,269	1,304	1,339	1,374	...	...	...	...
Colonel.....	1,424	1,469	1,514	...	...	...	...	...	...
RADIO NAVIGATORS									
	\$	\$	\$	\$	\$	\$	\$	\$	\$
Lieutenant.....	665	730	745	...	...	...	...	...	...
Lieutenant commissioned from the ranks.....	747	772	807	842	877	...	...	...	...
Captain.....	797	827	867	907	947	987	1,027	1,047	1,067
Major.....	968	998	1,028	1,058	1,088	1,118	...	...	...
Lieutenant-Colonel.....	1,159	1,194	1,229	1,264	1,299	...	...	...	...
Colonel.....	1,424	1,469	1,514	...	...	...	...	...	...
MEDICAL									
	\$	\$	\$	\$	\$	\$	\$	\$	\$
Captain.....	694	728	762	1,042	1,090	1,138	1,186	1,233	...
Major.....	1,180	1,228	1,276	1,324	1,372	1,421	...	...	...
Lieutenant-Colonel.....	1,371	1,419	1,467	1,515	...	...	...	...	...
Colonel.....	1,503	1,544	1,586	...	...	...	...	...	...
Brigadier.....	1,709	1,751	1,792	...	...	...	...	...	...
DENTAL									
	\$	\$	\$	\$	\$	\$	\$	\$	\$
Captain.....	881	915	949	987	1,025	1,082	1,130	1,215	...
Major.....	1,031	1,079	1,127	1,175	1,223	1,270	...	...	...
Lieutenant-Colonel.....	1,276	1,324	1,372	1,421	...	...	...	...	...
Colonel.....	1,362	1,410	1,458	1,506	...	...	...	...	...
LEGAL									
	\$	\$	\$	\$	\$	\$	\$	\$	\$
Lieutenant.....	584	...	...	...	...	...	...	...	...
Captain.....	639	667	678	712	745	778	...	...	...
Major.....	835	869	907	945	983	1,043	1,082	1,137	...
Lieutenant-Colonel.....	1,148	1,196	1,244	1,292	1,372	1,421	...	...	...
Colonel.....	1,499	1,594	1,689	...	...	...	...	...	...
Brigadier.....	1,759	1,809	1,859	...	...	...	...	...	...

<sup>1</sup> Equivalent ranks are given on p. 1171.      <sup>2</sup> Incentive pay increases, at rates that vary with length of service, may be granted to an officer when he has met predetermined performance standards.      <sup>3</sup> \$411 payable to an officer entitled to marriage allowance immediately prior to Oct. 1, 1966.



**2.—Monthly Rates of Pay for Men of the Canadian Armed Forces,  
Effective Oct. 1, 1966**

Army Rank and Equivalent <sup>1</sup>	Pay Level	Incentive Pay Category <sup>2</sup>	Pay Field				
			3	4	5	6	7
			\$	\$	\$	\$	\$
Private.....	Apprentice	...	140	140	140	140	140
Private.....	1	...	207	207	207	207	207
Private.....	2	...	225	225	225	225	225
Private.....	3	...	295	298	302	306	310
Private.....	4	...	335	340	345	350	355
	4	1	351	356	361	366	372
	4	2	371	376	381	387	393
	4	3	394	400	406	412	418
	4	4	404	410	416	422	428
Corporal.....	5(A)	...	435	454	468	481	491
	5(A)	1	438	457	471	484	494
	5(A)	2	441	460	474	487	497
	5(A)	3	444	463	477	490	500
	5(A)	4	447	466	480	493	503
	5(A)	5	450	469	483	496	506
	5(A)	6	453	472	486	499	509
Corporal <sup>4</sup> .....	5(B)	...	445	464	478	491	501
	5(B)	1	448	467	481	494	504
	5(B)	2	451	470	484	497	507
	5(B)	3	454	473	487	500	510
	5(B)	4	457	476	490	503	513
	5(B)	5	460	479	493	506	516
	5(B)	6	463	482	496	509	519
Sergeant.....	6	...	485	506	523	538	550
	6	1	490	511	528	543	555
	6	2	495	516	533	548	560
	6	3	550	521	538	553	565
	6	4	505	526	543	558	570
	6	5	510	531	548	563	575
	6	6	515	536	553	568	580
Staff Sergeant.....	6	...	515	536	553	568	580
	6	1	520	541	558	573	585
	6	2	525	546	563	578	590
	6	3	530	551	568	583	595
	6	4	535	556	573	588	600
	6	5	540	561	578	593	605
	6	6	545	566	583	598	610
Warrant Officer Class 2.....	7	...	561	582	599	614	626
	7	1	568	589	606	621	633
	7	2	575	596	613	628	640
	7	3	582	603	620	635	647
	7	4	589	610	627	642	654
	7	5	596	617	634	649	661
	7	6	603	624	641	656	668
Warrant Officer Class 1.....	8	...	642	667	686	702	715
	8	1	651	676	695	711	724
	8	2	660	685	704	720	733
	8	3	669	694	713	729	742
	8	4	678	703	722	738	751
	8	5	687	712	731	747	760
	8	6	696	721	740	756	769

<sup>1</sup> Equivalent ranks are given on p. 1171.<sup>2</sup> Incentive pay increases, at rates that vary with length of service, may be granted to a man when he has met predetermined performance standards; it is payable after one year of service, except for "Private" at pay level 4 (see footnote <sup>3</sup>).<sup>3</sup> Payable after seven years of service.<sup>4</sup> Rate

5(B) applies to corporals who are appointed to specific establishment positions that entail additional responsibility.

## Equivalent Ranks—Navy, Army and Air Force

<i>Navy</i>	<i>Army</i>	<i>Air Force</i>
Ordinary Seaman Under 17 Years	Private Recruit Under 17 Years	Aircraftsman 2nd Class Under 17 Years
Ordinary Seaman Basic Rate	Private Recruit	Aircraftsman 2nd Class
Ordinary Seaman Trained	Private Trained Basic Rate	Aircraftsman 1st Class
Able Seaman	Private Trained Higher Rate	Leading Aircraftsman
Leading Seaman	Corporal	Corporal
Petty Officer 2nd Class	Sergeant	Sergeant
Petty Officer 1st Class	Staff Sergeant	Flight Sergeant
Chief Petty Officer 2nd Class	Warrant Officer Class 2	Warrant Officer Class 2
Chief Petty Officer 1st Class	Warrant Officer Class 1	Warrant Officer Class 1
Naval Cadet	Officer Cadet	Officer Cadet
Acting Sub-Lieutenant	2nd Lieutenant	Pilot Officer
Sub-Lieutenant	Lieutenant	Flying Officer
Commissioned Officer	Lieutenant, commissioned from the ranks	Flying Officer, commissioned from the ranks
Lieutenant.	Captain	Flight Lieutenant
Lieutenant-Commander	Major	Squadron Leader
Commander	Lieutenant-Colonel	Wing Commander
Captain	Colonel	Group Captain
Commodore	Brigadier	Air Commodore
Rear-Admiral	Major-General	Air Vice-Marshal
Vice-Admiral	Lieutenant-General	Air Marshal

**Allowances Issuable to Canadian Forces.**—The following are the most common entitlements, aside from pay, for members of the regular Forces. Other entitlements related to special duties and to the reserve Forces are not shown.

*Aircrew Allowance.*—Aircrew allowance in varying amounts may be paid to a member of aircrew, or an officer or man undergoing flying training to become a pilot, navigator or other member of aircrew if he is not already receiving the special rate of pay applicable to pilots or navigators.

*Outfit Allowance and Clothing Upkeep Allowance.*—Officers receive a single payment of \$450 on appointment and Warrant Officers Class 1 receive \$270. Men receive a free issue of clothing on joining and thereafter a monthly clothing upkeep allowance of \$7; Navy Petty Officers 1st Class and above receive \$8. Women receive a free issue of clothing on joining with an underclothing allowance of \$15, and thereafter a monthly clothing allowance of \$8.

*Foreign Allowances.*—Officers and men posted for duty to a country outside of Canada are entitled to allowances to compensate for additional living expenses or hardships incurred; these vary with rank, appointment and location.

*Isolation Allowance.*—Isolation allowance, at rates which depend on the specific location, are paid to personnel serving at isolated posts in Canada.

*Submarine Allowance.*—An officer or man undergoing submarine training or filling an appointment in a submarine receives from \$32.50 to \$115 a month, depending on rank.

*Risk Allowance.*—An officer or man actively engaged or undergoing training as a parachutist or on flying duties, and not entitled to aircrew allowance, is paid risk allowance at the rate of \$30 a month.

*Sea Duty Allowance.*—An officer or man serving in a ship is entitled to sea duty allowance at the rate of \$15 a month.

## Section 2.—The Command Structure of the Canadian Forces

The Canadian Forces are organized on a functional basis to reflect the major commitments assigned by the Government. Under this concept, all Forces devoted to a primary mission are grouped under a single commander who is assigned sufficient resources to discharge his responsibilities. Specifically, the Canadian Forces are formed into ten major organizational entities reporting to the Chief of the Defence Staff. These are as follows:—

### MOBILE COMMAND

The role of Mobile Command is: to provide military units suitably trained and equipped to support United Nations or other peacekeeping/peace-restoring operations; to provide ground forces, including tactical air support for the protection of Canadian territory; and to maintain operational readiness of combat formations in Canada required for support of overseas commitments.

The Forces assigned include: three infantry brigade groups in Canada; the United Nations Emergency Force in the Middle East; the United Nations Force in Cyprus; one RCAF Reconnaissance Squadron; and one Transport Helicopter Platoon. Two of the brigade groups in Canada are being reorganized to perform a wide variety of roles and will be provided with air-portable equipment.

### 4 CIBG

4 CIBG is the Canadian contribution to NATO ground forces in Europe. The composition of the brigade is generally similar to the British Infantry brigade group. It also contains a surface-to-surface missile (Honest John) battery in addition to the normal artillery field regiment.

### 1 AIR DIVISION

1 Air Division is the Canadian contribution to the strike-reconnaissance forces available to SACEUR. The Division is operationally responsible to 4 Allied Tactical Air Force (4 ATAF) and has eight squadrons equipped with CF-104 *Super Starfighters* located at three airfields in France and Germany.

### MARITIME COMMAND

All Maritime forces, sea and air, on the Atlantic and Pacific Coasts have been placed under the Commander, Maritime Command, with Headquarters in Halifax, N.S. The Maritime Commander (Pacific), who is the Deputy Commander, has his Headquarters in Esquimalt, B.C.

The role of the Maritime Command is to defend Canada against attack from the sea; to provide anti-submarine defence in support of NATO (the Commander, Maritime Command is also Commander, Canadian Atlantic Sub-Area, in Allied Command Atlantic); and to conduct search and rescue operations on the East and West Coasts of Canada. A secondary role is to provide sea lift in support of Mobile Command.

The Maritime Forces are composed of the following ships: one aircraft carrier equipped with twin-engine *Tracker* aircraft and *Sea King* helicopters; 22 destroyers, escort-type; two supply ships; two submarines; and six small support and training vessels. There are four air squadrons and six naval air squadrons in service.

### AIR DEFENCE COMMAND

Air Defence Command participates jointly with the United States in the air defence of North America, through NORAD. It has functional control of three interceptor squadrons, two SAM squadrons, one SAGE control centre and two transcontinental radar lines. Operational control is exercised by HQ NORAD.

### AIR TRANSPORT COMMAND

The role of Air Transport Command is to provide air transport support to Canadian Forces everywhere, and to conduct search and rescue operations in the Eastern Search and Rescue Area (roughly, Ontario and Quebec). It has four squadrons operating short-range, long-range and troop-carrying aircraft and an Air Transport Unit operating *Caribou* and *Otter* aircraft from El Arish, Egypt, in support of UNEF.

### TRAINING COMMAND

The role of Training Command is to provide individual training for the Forces and to conduct search and rescue operations within the Western Search and Rescue Area (roughly, Manitoba, Saskatchewan and Alberta). All existing training units of the RCN, the Canadian Army and the RCAF where individual training is carried out have been placed under functional control of Training Command. The Canadian Services Colleges (RMC, Royal Roads and CMR), the Staff Colleges, and medical/dental training are under the direct control of Canadian Forces Headquarters. (See p. 1178.) Land/Air Warfare operational training is the responsibility of Mobile Command. Basic parachute training and basic fixed wing or helicopter pilot training are a Training Command responsibility.



#### THE CANADIAN FORCES COMMUNICATIONS SYSTEM (CFCS)

The role of the CFCS is to provide fixed communications networks for the Forces and to provide a national communications system for survival operations (civil defence). To carry out this role, CFCS commands all fixed communications installations within Canada.

#### THE RESERVE AND SURVIVAL ORGANIZATION

Administration of reserves is a responsibility of the Deputy Chief of Reserves (two-star general) at CFHQ. Command and administration of the Army Reserves is effected through 12 District Headquarters organized on a geographical basis. Although the Deputy Chief of Reserves has been given responsibility for Naval Reserve Divisions and RCAF Auxiliary Units, these report to the Deputy Chief through the Commander, Naval Divisions and functional Commanders, as appropriate.

The role of the Organization is to provide aid to the civil power, emergency forces for national survival, and provincial representation and to provide a training force to support the Regular Forces.

#### MATERIEL COMMAND

The role of Materiel Command is to provide logistic support of the Forces, i.e., procurement, provisioning and supply of materiel. To carry out this role, Materiel Command controls the operations of naval dockyards, ordnance depots, engineer depots, supply depots, repair depots and base workshops in Canada.

### Administration of Military Bases in Canada

Staffs and services required below Command Headquarters level to administer and support units based in a particular locality are being organized on Canadian Forces bases. The primary role of each base is to provide base-level administration and supporting services to those units located on or near the base. Each base has been allocated to a functional commander, to whom the base commander reports. The base commander is provided with sufficient staff, with representation from the four functional branches, to command and administer the base.

## Section 3.—Operations and Training of the Canadian Forces

### The Royal Canadian Navy

**The Fleet.**—As of December 1966, the RCN had 42 ships in commission and one submarine of the Royal Navy under RCN operational control at Halifax. HMCS *Ojibwa*, the first of three "O" Class conventional submarines, had completed her first year with the Atlantic Fleet; the second submarine, *Onondaga*, was due to commission in May 1967 and the third, *Okanagan*, was estimated for completion in early 1968. The aircraft carrier *Bonaventure* was undergoing extensive refit, scheduled for completion in August 1967. *Fraser*, the last of seven St. Laurent Class destroyers converted to helicopter operation, was ready for service in the fall of 1966, as was the fast hydrofoil craft, HMCS *Bras d'Or* (FHE 400). Work on *Terra Nova*, the first of seven ships of the Restigouche Class to be modernized, was under way, scheduled for completion in the spring of 1968; modernization of the second ship will start in March 1967 and the last ship will be completed in September 1969. Construction of the research vessel, *Quest*, which will serve on the East Coast, started in August 1966 and construction of two operational support ships, *Protecteur* and *Preserver*, began in December. A new class of four destroyer escorts having helicopter capabilities is projected for the future—construction of the first will commence in the fall of 1967. A former Bangor Class Fleet Minesweeper, *Granby*, now being utilized as a Clearance Diving Depot Ship, will also be disposed of in 1967 and will be replaced by an ocean escort to be re-named *Granby*.

**Training.**—The major training establishments of the RCN are CFB *Cornwallis* near Digby, N.S.; Fleet School *Shearwater* near Dartmouth, N.S.; Fleet School *Stadacona* at Halifax, N.S.; Fleet School *Hochelaga* at LaSalle, Que.; HMCS *Gloucester* near Ottawa, Ont.; and Fleet School *Naden* at Esquimalt, B.C.

Men and women entering the RCN receive their basic training at CFB *Cornwallis* where the courses are normally 14 weeks in length. English-language training is provided for French-speaking recruits at CFB *St. Jean*, the courses lasting up to a maximum of 21

weeks. Cadets entered under the Regular Officer Training Plan (ROTP) or College Training Plan (CTP) receive most of their early training at the Canadian Services Colleges (see p. 1178) or a Canadian university; those entered on a short-service appointment train in HMCS *Venture* at Esquimalt, B.C. All cadets receive practical training with the Fleet at various times of the year. A University Naval Training Division program provides junior officers for the RCN and the RCN Reserve. The cadets are required to complete two winter-training periods and two summer-training periods and certified specified courses.

**Royal Canadian Naval Reserve.**—The recruiting and training of officers and men of the RCN Reserve is conducted mainly through 16 Naval Divisions across Canada under the over-all command of the Commanding Officer Naval Divisions, with Headquarters at Hamilton, Ont. Naval Divisions are established in the following centres:—

St. John's, Nfld., HMCS *Cabot*  
 Halifax, N.S., HMCS *Scotian*  
 Saint John, N.B., HMCS *Brunswick*  
 Quebec, Que., HMCS *Montcalm*  
 Montreal, Que., HMCS *Donnacona*  
 Toronto, Ont., HMCS *York*  
 Ottawa, Ont., HMCS *Carleton*  
 Kingston, Ont., HMCS *Cataraqui*

Hamilton, Ont., HMCS *Star*  
 Windsor, Ont., HMCS *Hunter*  
 Port Arthur, Ont., HMCS *Griffon*  
 Winnipeg, Man., HMCS *Chippawa*  
 Saskatoon, Sask., HMCS *Unicorn*  
 Calgary, Alta., HMCS *Tecumseh*  
 Vancouver, B.C., HMCS *Discovery*  
 Esquimalt, B.C., HMCS *Malahat*

Naval Divisions, commanded by Reserve officers, provide both basic and specialized training for officers and men of the RCN Reserve. The Great Lakes Training Centre at Hamilton conducts new-entry reserve training afloat during the summer months.

**Royal Canadian Sea Cadets.**—Royal Canadian Sea Cadets, sponsored by the Navy League of Canada and supported by the RCN, consist of 174 corps, supervised by 15 naval officers responsible to the Commanding Officer Naval Divisions. Instruction is carried out by RCSCC officers. Two training establishments—*Cornwallis* on the East Coast and *Quadra* on the West Coast—accommodate officers and cadets for two-week training periods in the summer. In addition, selected cadets receive a seven-week training course at naval establishments. Sea experience is provided throughout the year in various types of ships of the RCN. As at October 1966, the strength of the corps was 1,015 officers and 9,221 cadets.

## The Canadian Army

**Operations in 1966.**—In fulfilment of military obligations under the North Atlantic Treaty, Canada continued to provide ground forces for the defence of Western Europe. The 4th Canadian Infantry Brigade Group, the major units of which were the Lord Strathcona's Horse (Royal Canadians), the 2nd Regiment Royal Canadian Horse Artillery, No. 1 Surface to Surface Missile Battery, 2nd Battalion The Royal Canadian Regiment, 1st Battalion Princess Patricia's Canadian Light Infantry (replaced by 2nd Battalion in late 1966), and the 2nd Battalion Royal 22e Regiment, constituted the Land Forces contribution to NATO in Germany. The Headquarters of the Brigade is at Soest and the married quarters are located in the vicinity of Soest, Werl, Hemer and Iserlohn. The battalion group (The 1st Battalion The Black Watch [Royal Highland Regiment of Canada]) that Canada provided to form part of Allied Command Europe Mobile Forces (Land Component) was exercised in North Norway in early 1966. It is stationed in Canada but held in readiness for employment should the Mobile Force be activated.

The Canadian Armed Forces continued to provide forces in support of United Nations operations as follows: (1) A force of approximately 794 officers and men forms part of the UN Emergency Forces in the Middle East with tasks of providing engineer services, communications, stores, transport, workshop and postal services for the Force. (2) A force of 880 officers and men forms part of the UN Force in Cyprus; the Canadian contribution consisted of a reconnaissance squadron, an infantry battalion, a Canadian

Contingent Headquarters and a Canadian element for the UN Headquarters. (3) Canadian Armed Forces contributions to other UN missions included some 39 officers and men employed in Palestine, Kashmir and Korea (the UN India-Pakistan Observer Mission was concluded in the early spring of 1966). (4) A specially trained and equipped infantry battalion (1st Battalion The Canadian Guards) is maintained in Canada to provide a force for service in support of the UN in any part of the world on short notice.

In addition to its UN commitments, the Canadian Armed Forces, as a result of Canadian participation in the International Commissions for Supervision and Control in Viet-Nam, Cambodia and Laos, continued to provide approximately 65 officers and men for truce supervisory duties in Indo-China.

Canadian Armed Forces training teams are being maintained in Ghana and Tanzania to assist in the training of armed forces of those countries. The Canadian Armed Forces provided 21 all ranks for the Ghana team and 69 all ranks for the Tanzania team. A number of officer cadets and other ranks from Ghana, Tanzania, Nigeria, Barbados, Jamaica, Trinidad and Tobago, Malaysia, and Zambia have received training in Canadian Forces schools.

**Training.**—Most of the recruit, basic and advanced training in support of the Canadian Army Regular takes place at schools under the supervision of Training Command. During 1966, a training enrolment of 6,794 recruits and the corps training of officers and men of the Army were carried out at regimental depots, units and schools; 348 officers completed promotion qualification examinations; 64 officers attended the Canadian Army Staff College; and 10 commenced courses at Commonwealth Staff Colleges. Qualifying courses for junior and senior NCOs were conducted at Training Command schools. Officers from the RCAF and RCN as well as officers from Australia, Belgium, Britain, Germany, India, Pakistan, Tanzania, Jamaica, Zambia and the United States attended courses at Canadian Schools.

English and French language training is available to all ranks. The R22eR Depot (Language Training Company) conducts six-month French language courses for English-speaking officers and NCOs, and a number of French-speaking recruits and potential NCOs receive English language training.

Trades training is given at schools and units. When required, the facilities of civilian and allied service schools are used to supplement training at service establishments.

Under an apprentice training program, selected young men are trained as soldier tradesmen and prepared for advancement to senior NCO ranks. During 1966, 83 apprentices were enrolled and 29 civilian teachers were employed to provide academic instruction for about 250 apprentice soldiers. Academic credits are obtained from the educational authorities of the province where the training is conducted.

In 1966, the training of the Field Force took place under the direction of Mobile Command. Airborne continuation training was carried out by designated units in conjunction with unit exercises. The air transportable Ace Mobile Force Battalion participated in a winter exercise in Norway under cold weather conditions. Parachute and air supply courses were conducted at the Canadian Joint Air Training Centre at Rivers, Man., and courses in Arctic training at Camp Borden, Ont. Collective training for units in Canada was carried out at Camp Gagetown, N.B., and Camp Wainwright, Alta. All-arms training comprised sub-unit and unit training, and culminated in exercises at the Brigade Group level.

Under the Regular Officer Training Plan (ROTP), selected students are trained for commissions in the Canadian Forces at the Canadian Services Colleges (see p. 1178) and at Canadian universities and colleges that have university reserve units. Also, university reserve units form an integral part of the campus life at most universities. These are maintained primarily to produce officers for the Reserve components of the Canadian Forces and receive training similar to that given members of the ROTP.



**Canadian Army (Militia).**—The recently revised priority of roles of the Militia is: support of the Regular Army; provision of a training force; and assistance for internal security and the provision of specialists to assist in staffing national survival installations in times of national emergency. Militia training is intended to produce personnel and units well trained in the basic military skills and techniques of their corps and in the basic skills for survival operations. In consonance with these newly assigned roles, the Militia was extensively reorganized during the period November 1964 to March 1965. Based largely upon recommendations of the Ministerial Commission on the Reorganization of the Canadian Army (Militia), a total of 172 self-accounting units, having an approved establishment of 41,718 all ranks, is authorized. Concurrently, personnel and training policies were revised. Emphasis has been placed on youth, physical fitness, professional competence and vigorous leadership.

**Royal Canadian Army Cadets.**—The aim of the Army Cadet organization is to provide cadets with a sound knowledge of military fundamentals based on the qualities of leadership, patriotism and good citizenship. Planning and the supervision of organization, administration and training are carried out by the Canadian Army (Regular), and 136 officers and men are employed continuously on these duties. Training and administration of Army cadets is the responsibility of officers of the Cadet Services of Canada, a sub-component of the Reserves, and civilian instructors. As of Oct. 30, 1966, cadet and civilian instructors numbered 2,103.

Cadets, aged 14-18 inclusive, take a progressive three-year course in basic military subjects at their cadet corps and selected cadets are given training at summer camps. In 1966, 5,062 cadets attended six-week trades and specialist courses at Aldershot, N.S., Farnham, Que., Ipperwash and Camp Borden, Ont., Clear Lake, Man., and Vernon, B.C.; 1,688 cadets attended two-week cadet leader and special camps at Aldershot, N.S., Montreal, Que., Ipperwash, Ont., and Clear Lake and Rivers, Man.; 215 master cadets, one officer and six cadets from Britain attended the Banff National Army Cadet Camp, Alta., for four weeks; 58 cadets proceeded on an exchange of cadets between Canada and Barbados, Jamaica and Trinidad and Tobago during the summer of 1966 and one officer and six cadets attended the Outward Bound Course in Towyn, Wales; 388 cadet instructors attended qualifying courses of up to six weeks and 424 cadet and civilian instructors were employed in training and administrative duties at summer camps. As of October 1966, there were 55,928 cadets enrolled in 494 corps.

### The Royal Canadian Air Force

**Operations in 1966.**—The RCAF contribution to the air defence of North America during the year consisted of three CF-101B interceptor squadrons, two *Bomarc* surface-to-air missile squadrons and twenty-nine radar sites. Two of these radar sites were deactivated in the latter half of the year. These forces, together with the Distant Early Warning Line (DEW), operated under the operational control of North American Air Defence Command (NORAD). No. 1 Air Division, Canada's NATO contribution in Europe, operated with eight squadrons of CF-104 aircraft. Six of these squadrons were employed in the strike attack role and the other two were employed in the photo reconnaissance role.

The RCAF Maritime Air Command contributed four land-based maritime squadrons to the Maritime Defence of North America; three of these, based on the East Coast, are equipped with *Argus* aircraft, the largest and most modern anti-submarine aircraft in the world. A continuous program of aircraft modernization and re-equipping with improved anti-submarine devices was conducted throughout the year. The East Coast squadrons and the *Neptune* aircraft squadron on the West Coast participated in a number of national, international and NATO anti-submarine exercises, and maintained daily patrols and surveillance of ocean areas adjacent to the Canadian coastlines. Early in the year the RCAF Maritime Air Command became an integral part of the new integrated Maritime Command.

Air Transport Command (ATC) continued to provide support to the Air Division and to the Army Brigade in Europe using long-range *Yukon* and *Hercules* aircraft. Airlift support was provided to the UN Emergency Force Middle East and to the UN contingents in Cyprus. Flying units, operating *Caribou* and *Otter* aircraft, were maintained in Egypt and India/Pakistan in support of UNEF, UNMOGIP and UNIPOM. In addition, ATC provided a major contribution to the Zambian oil airlift. In Canada, ATC airlifted Department of National Defence personnel and cargo from coast-to-coast and into the Arctic regions. *Hercules* aircraft were employed for paratroop training of the Canadian Army, and T-33 aircraft carried out routine photographic missions for the Department. Search and rescue services were provided in the Canadian areas of responsibility. Throughout the year, the RCAF flew more than 6,000 hours on search and rescue missions involving missing persons, aircraft and marine vessels. Altogether, some 2,000 separate incidents were dealt with.

**Training.**—Each year the RCAF gives basic training to several thousand officers and men to meet retirements, releases and the introduction of new equipment. English language training on initial enlistment is given to French-speaking personnel—at St. Jean, Que., for officers and airmen. Course length is variable, up to a maximum of 21 weeks. Advanced trades training is given within the service, training on specialized equipment is obtained also from industrial firms, and some officers attend postgraduate courses at Canadian and United States universities. In addition, aircraft trades training is given to a number of trainees from developing countries.

Aircrew selection is carried out at Officers' Selection Unit, CFB Downsview, Ont. Indoctrination training for aircrew officer cadets takes place at Central Officers' School, Venture, B.C. RCAF pilots are given basic and advanced jet training at Moose Jaw, Sask., and Gimli, Man., and advanced multi-engine training at Portage la Prairie, Man. Radio navigators are trained at Winnipeg, Man. In the year ending Mar. 31, 1967, approximately 124 RCAF pilots and 80 radio navigators will complete training to "wings" standard; pilot training on piston engined aircraft will be provided for 37 RCN and six CA(R) officers. Under bilateral agreements, jet training will be provided for 35 Danish, 25 Norwegian and four Malaysian pilots, radio navigation training for three Norwegian and two Danish navigators, basic helicopter training for three Danish naval pilots and one Jamaican army officer, and piston engine training for 15 Malaysian and 31 Tanzanian pilots.

Indoctrination training for newly commissioned non-flying list officers is given at CFB Esquimalt, B.C. and technical training at CFB Clinton, Ont. Basic and advanced trades training for airmen is given at technical trades schools at Camp Borden and Clinton, Ont. Trade advancement training to help airmen improve their job proficiency and to qualify for higher trade grouping and pay is provided to Regular and Reserve personnel. Operational training on specific aircraft and equipment is given at field technical training units and operational training units situated throughout Canada. Semi-annual trade examinations are written under the direction of the Training Standards Establishment, Trenton, Ont.

**RCAF Reserves.**—The active sub-components of the RCAF Reserves are designated as the Auxiliary and the Primary Reserve.

The Auxiliary is made up of four Auxiliary Wing Headquarters located in Montreal, Toronto, Winnipeg and Edmonton and six Flying Squadrons located in the same cities; Wing Headquarters direct the operations, training and administration of the Flying Squadrons in their respective areas. All Flying Squadrons are equipped with the DHC-3 *Otter*. Their role is light transport, national survival, and search and rescue services. Light transport and national survival exercises are carried out in conjunction with Regular and Reserve formations of the RCN and the Canadian Army as well as the RCAF. Search and rescue operations are often carried out in accompaniment with civilian and RCAF Regular counterparts. In the event of emergency, these squadrons would be used to support civilian and military requirements.



The Primary Reserve is composed of Air Cadet Officers who staff the Royal Canadian Air Cadet Squadrons throughout Canada, of Manning Support Officers who are employed for 15 to 30 days each year in career counselling duties at RCAF recruiting units, and of University Squadron Staff Officers whose main function is to train members of the University Reserve Training Plan (URTP) during the academic year.

Each summer, approximately 130 first-year URTP undergraduates attend an officers training course at Reserve Officers School. Following this initial training, specialized training is provided in aeronautical engineering, armament, administration, accounts, construction engineering, mobile support equipment, recreation, supply or telecommunications. Second-year cadets continue the formal or contact training begun the previous year and a small number of outstanding cadets is selected for a third summer of contact training at a field unit.

**Royal Canadian Air Cadets.**—The Air Cadet movement operates on the basis of a partnership between the Air Cadet League of Canada, a voluntary civilian organization, and the Royal Canadian Air Force. The League sponsors and administers Air Cadet activities while the RCAF provides training personnel, syllabi and equipment and also assists the League in organization and administration. The objectives of air cadet training are to encourage air cadets to develop the attributes of good citizenship, to stimulate in them an interest in aviation and space technology and to help them develop a high standard of physical fitness, mental alertness and discipline. The authorized ceiling of cadet enrolment is 28,000; the strength at Oct. 1, 1966 was 25,596, attached to 369 squadrons across Canada.

During the summer of 1966, camps were conducted at Canadian Forces Bases at Greenwood, N.S., St. Jean, Que., Trenton, Ont., and Penhold, Alta., attended by more than 7,000 cadets and 858 officers and instructors. A seven-week Senior Leaders' Course was held for 240 cadets at Camp Borden, Ont. A Bush Familiarization Course, teaching the techniques of survival and ground search, was conducted at Namao, Alta., for 27 cadets. Under the International Exchange Visits Program for 1966, 62 cadets were exchanged with Austria, Belgium, Britain, Denmark, France, Italy, Israel, the Netherlands, Norway, Sweden, Switzerland, Turkey, the United States and West Germany.

About 250 senior air cadets receive flying training annually at flying clubs through RCAF sponsored scholarships; 74 additional scholarships were awarded by the Air Cadet League and other organizations in 1966.

## Section 4.—Services Colleges and Staff Training Colleges

**Canadian Services Colleges.**—The three Canadian Services Colleges are the Royal Military College of Canada founded at Kingston, Ont., in 1876, Royal Roads which was established in 1941 near Victoria, B.C., as a school for naval officers, and Collège militaire royal de Saint-Jean established at St. Jean, Que., primarily to meet the needs of French-speaking cadets. The Royal Military College and Royal Roads were constituted as Canadian Services Colleges in 1948, and Collège militaire royal de Saint-Jean was opened in 1952. In 1959, the Legislature of the Province of Ontario granted the Royal Military College a charter empowering it to grant degrees.

The purpose of the instruction and training at the Services Colleges is to impart the knowledge, to teach the skills and to develop the qualities of character and leadership essential to officers of all three Armed Services. The courses of instruction provide a sound and balanced liberal scientific and military education leading to degrees in arts, science and engineering which are granted by the Royal Military College.

For cadets entering the Royal Military College and Royal Roads, the course is of four years duration. As the third and fourth years of the course are given only at the Royal Military College, cadets entering Royal Roads must proceed to that College for the final



two years of the arts, science or engineering courses. For cadets entering Collège militaire royal de Saint-Jean, which gives a preparatory year, the course is of five years duration. Cadets take the preparatory, first and second years at that institution and the final two years at the Royal Military College.

For admission to the Royal Military College of Canada and to Royal Roads, an applicant must have obtained senior matriculation or equivalent standing. For admission to Collège militaire royal de Saint-Jean, an applicant must have junior matriculation or equivalent. A candidate who has obtained a Bachelor of Arts degree at a classical college or has completed first year science or philosophy II at Collège Mont Saint-Louis may apply for entry into first year at Collège militaire royal de Saint-Jean. A candidate must be single, a Canadian citizen or British subject normally resident in Canada, and be physically fit. The age limits for admission to the first year are between 16 and 21 years as of Jan. 1 of the year of entry; for admission to the preparatory year a cadet must have reached his 16th but not his 20th birthday on Jan. 1 of the year of entry.

Most cadets entering the Services Colleges enrol under the Regular Officer Training Plan. Applicants accepted enrol according to their choice, as officer cadets in the Royal Canadian Navy, the Canadian Army or the Royal Canadian Air Force. Costs of tuition, uniforms, books, instruments and other fees are borne by the Department of National Defence and cadets are paid \$180 a month. Cadets are charged \$85 a month for board and lodging. On successfully completing their academic and military training, cadets are granted permanent commissions in the Regular Force.

A limited number of high school students may be selected to enter the Services Colleges on payment of tuition fees, etc. Graduates are granted commissions and serve in the Reserve components of the Forces. Young men who qualify for Dominion Cadetships also serve in a reserve capacity. These Cadetships are awarded by the Federal Government in recognition of a candidate's parent having been killed, died or been severely incapacitated in the service of one of Canada's Armed Forces or the Canadian Merchant Marine during hostilities. A maximum of 15 Dominion Cadetships may be awarded in any one year, five in each Service. Each is valued at \$580, which covers first-year fees.

During the 1966-67 academic year, 1,139 cadets were in attendance at the Services Colleges, 563 of them at the Royal Military College, 201 at Royal Roads and 375 at Collège militaire royal de Saint-Jean. Of the total, 253 were enrolled in the Navy, 409 in the Army and 477 in the Air Force.

**Staff Training Colleges.**—The Canadian Army Staff College at Kingston, Ont., gives an 11-month course for the training of officers for staff appointments. Although most of the student body is composed of Canadian Army Officers, officers from the other two Services and from the armies of other Commonwealth and NATO countries also attend. Instruction is based upon the study of précis and references, demonstrations and lectures, and indoor and outdoor exercises. Aside from purely military subjects, the curriculum includes research and development, world affairs and lectures by prominent guest speakers.

The Canadian Forces College at Armour Heights, Toronto, Ont., consists of three colleges for the staff training of officers:—

*Staff College.*—Officers of Major (equivalent) rank take a 44-week course to prepare them for assumption of higher rank in the Canadian Armed Forces. Training emphasizes logical and precise written and oral expression of ideas; staff and administrative procedures; scientific and technical developments; and national and international current affairs.

*Staff School.*—Officers of Captain and Lieutenant (equivalent) rank take a 14-week course to prepare them to assume junior staff and administrative positions in the Canadian Armed Forces. Training emphasizes military administrative procedures; the conduct of correspondence; and civil and military organization. Students are also introduced to national and international current affairs.

*Extension School.*—Graduates of the Staff School are provided with extension courses in a variety of military and academic subjects.

National Defence College at Kingston, Ont., the senior defence college, provides an 11-month course of study covering the economic, political and military aspects of the defence of Canada. Senior officers and civil servants from the Armed Forces and Federal Government departments attend, as well as a few representatives from industry. Lecturers are chosen from among the leaders in various fields in Canada and other countries. In addition, tours and visits to certain parts of Canada, the United States, Europe and the Middle East familiarize students with conditions and influences in their own and other countries.

### Section 5.—The Defence Research Board

The Defence Research Board, established in 1947, provides scientific assistance and advice to the Canadian Forces. It consists of a full-time chairman and vice-chairman, two or more *ex officio* members and nine other appointed members. The *ex officio* members are the Deputy Minister of National Defence, the President of the National Research Council and such other members as may be appointed by the Minister of National Defence as members representing the Canadian Forces. The other members, appointed by the Governor in Council for three-year terms, are selected from universities and industry because of their scientific and technical backgrounds.

The organization consists of headquarters staff, an operational research corps and seven research laboratories, and liaison offices at London, England, Washington, U.S.A., and Paris, France. Advisory committees composed of leading Canadian scientists provide invaluable assistance to the Board by their consideration of a variety of problems.

The Defence Research Board is an integral and permanent part of the defences of the country. The Chairman is a member of the Defence Council. The Board's fundamental purpose is to correlate the special scientific requirements of the Armed Forces with the general research activities of the scientific community at large. Its efforts are concentrated upon defence problems of particular importance to Canada or for which Canada has unique resources or facilities. Existing research facilities such as those of the National Research Council are used whenever possible to meet the needs of the Armed Forces. The Board has built up new facilities only in those fields that have little or no civilian interest. Close collaboration is maintained with Canada's larger partners; specialization is made possible only through the willingness of Britain and the United States to exchange the results of their broader programs for the less numerous but nevertheless valuable benefits of Canadian research.

The Board operates seven specialized research and development laboratories which are concerned primarily with maritime warfare, guns, rockets and missiles as armaments, defence against missiles, research on the upper atmosphere using ground-based equipment as well as balloons, rockets and satellites, propulsion and propellants, telecommunications, geophysical studies of the Arctic, defence against atomic, chemical and biological weapons, studies of shock and blast, biosciences research and operational research. The Board also supports and organizes an extramural program of research in the universities and industry. Some 200 grants are awarded annually to Canadian university staff members for research on problems of defence interest and a special fund is used to place contracts with industry for research in selected fields.

Research on maritime warfare problems, particularly those relating to submarine detection and tracking, is carried out at the Naval Research Establishment, Dartmouth, N.S., and at the Pacific Naval Laboratory, Esquimalt, B.C. Research and development of weapons and defence against various weapons is undertaken in co-operation with the Armed Services at several establishments, the largest of which is the Canadian Armament Research and Development Establishment near Valcartier, Que. Its principal activities

include studies of defence against missiles, studies of the properties and application of infrared and other detection devices, exploration of the upper atmosphere with balloons and rockets, and the development of rocket propellants.

The Defence Research Telecommunications Establishment in Ottawa is concerned mainly with problems of communications which involve exploration of the ionosphere with ground-based equipment, with rockets and with satellites, and the applications of the science of electronics to military problems. Research on the defensive aspects of chemical, biological and atomic weapons is carried out at two Defence Research Board establishments—the Defence Chemical, Biological and Radiation Laboratories at Ottawa, Ont., and the Suffield Experimental Station at Ralston, Alta.

The Defence Research Medical Laboratories near Toronto are concerned with bio-sciences research, chiefly with raising the operating efficiency of man working in the military environment, and includes such subjects as human physiology, experimental psychology and research on clothing.

Operational research is carried on by an integrated headquarters group which conducts long-range scientific analysis of future defence problems. The staff consists of operational research scientists provided by the Board and service officers. The Board also provides operational research scientists as members of teams in the various Service Commands.

Thus, the Board continues to support the fields of research that are of foremost interest to the Canadian Armed Services and the program is under continuing review to ensure that cognizance is taken of all changes in emphasis in defence requirements. Close liaison is maintained between the Defence Research Board and the Department of Defence Production to ensure that research and development activities are closely integrated with production.

## PART II.—DEFENCE PRODUCTION\*

Under the provisions of the Defence Production Act (RSC 1952, c. 62, as amended), the Department of Defence Production has exclusive authority to procure the goods and services required by the Department of National Defence and the responsibility to ensure that the necessary productive capacity, capability and materials are available to support the defence production program. The latter responsibility includes defence development and production-sharing with the United States, defence production export activities with NATO and other friendly countries, and co-operation in research, development and production programs within the NATO alliance. The Department also provides management and staff for the Canadian Commercial Corporation, a Crown company primarily responsible for the contracting in Canada for defence goods purchased by other governments and for contracting for supplies to meet Canadian requirements under External Aid Programs and other international agreements. The Department is responsible for planning and making other necessary arrangements for the immediate establishment of a war supplies agency, should there be a nuclear attack.

Implementing recommendations of the Royal Commission on Government Organization, the Government assigned to the Department of Defence Production the responsibility for forming a central purchasing and supply agency. The plan of organization for a future Department of Supply prepared by the Department requires the integration of the purchasing organization of Defence Production with supply functions. These supply functions were grouped with the regional purchasing function of Defence Production and Crown Assets Disposal Corporation to form the Canadian Government Supply Service.

\* Prepared in the Information Division, Department of Defence Production, Ottawa.



Procurement and construction contracts issued by the Department of Defence Production and Defence Construction (1951) Limited\* had a net value of \$713,415,000 in 1965 and \$452,530,000 in the first half of 1966. (The net value of contracts is made up of the value of new contracts issued as well as amendments that increased or decreased existing contracts.) The net value of contracts in 1965 according to the various sources for which they were issued was as follows:—

<i>Source</i>	<i>Net Value</i>	<i>P.C. of Total Value</i>
	\$	
Department of National Defence.....	473,534,358	66.38
Department of Defence Production (DDP Votes).....	1,462,662	0.21
Foreign Governments—		
United States.....	154,384,358	21.64
Britain.....	1,843,278	0.26
Other.....	8,929,910	0.83
Canadian Sources other than DND and DDP—		
External Aid.....	19,650,299	2.75
Other Government Departments.....	56,609,793	7.93
<b>TOTALS.....</b>	<b>713,414,658</b>	<b>100.00</b>

The \$473,534,000 in contracts placed on behalf of the Department of National Defence in 1965 was 4.8 p.c. below the value in 1964. There was an increase of \$14,358,000 in the shipbuilding program, one of \$6,531,000 in the armament program and one of \$6,062,000 in the electronics and communication equipment program. On the other hand there was a decrease of \$15,891,000 in the aircraft program and one of \$10,124,000 in the tank-automotive program.

Contracts placed outside Canada on behalf of the Department of National Defence in 1965 amounted to \$82,543,000, which was 17 p.c. of the total net value of prime contracts issued. Contracts valued at \$47,856,000 were placed in the United States, \$26,509,000 in Britain and \$8,177,000 in other countries. Expenditure on contracts placed in 1965 was \$462,732,000, an amount 15.3 p.c. lower than in 1964. Expenditure against aircraft programs decreased by \$32,301,000 or 16.9 p.c.; for electronics and communication equipment by \$12,477,000 or 11.0 p.c. and for tank-automotive by \$10,423,000 or 40.8 p.c.

Of the \$452,530,000 in contracts issued during the first half of 1966, \$298,264,000 or 66 p.c. was for the Department of National Defence and expenditures against prime contracts placed for that Department stood at \$262,005,000. The Department of Defence Production placed \$1,463,000 in contracts in 1965 and \$1,641,000 in the first half of 1966 against certain appropriations to assist Canadian defence industries. Revolving Fund contracts amounted to \$16,288,000 in 1965 and \$21,047,000 in the first half of 1966.

Contracts placed for all sources other than the Departments of National Defence and Defence Production totalled \$238,418,000 in 1965, of which \$154,384,000 was for the United States Government; \$56,610,000 for Canadian non-defence Government departments and agencies and \$19,650,000 for External Aid programs. For the first six months of 1966, contracts placed for the United States Government amounted to \$81,708,000, for Canadian non-defence Government departments and agencies, \$39,000,000; and for External Aid programs, \$21,000,000.

**Defence Production and Development Sharing.**—In 1965, \$259,500,000 worth of United States defence production-sharing contracts were placed with Canadian industry, an increase of 55 p.c. over 1964. The higher level in 1965 was accounted for by increased levels of incremental funding on the United States share of the joint Canada/United States F-104G MAP aircraft program and increased United States procurement in areas such as aircraft engine and airframe spares, aircraft components, vehicle components, electronic navigation equipment and communication equipment. The total United States defence production-sharing procurement in Canada during the seven years of the program was \$1,174,200,000.

\* Military construction is the prime function of Defence Construction (1951) Limited (see p. 147).

Prime contracts placed by the United States Government with the Canadian Commercial Corporation increased from 1,561 in 1964, to 1,707 in 1965, the latter having a total value of \$146,500,000. Subcontracts received directly by Canadian firms increased from 2,445 to 2,895 and were valued at \$109,800,000. Other prime contracts received directly from the United States Government by Canadian industry and other institutions had a value of \$3,221,505.

In 1965, continued assistance was given to Canadian industry under the development-sharing program for research and development projects of interest to the United States Services; 56 development-sharing contracts were in effect with expenditure totalling \$22,000,000.

**Co-operation in NATO and RDP (Research, Development and Production) and Exports Overseas.**—Canadian industry is encouraged to participate in supplying the defence needs of European and other countries in such areas as aircraft, training and navigational aids and engine spares. During 1965, 80 Canadian firms reported the receipt of \$67,736,000 in prime contracts and subcontracts from 43 NATO and other countries (excluding the United States), although over 95 p.c. of this business came from some 14 countries. Of this total, which was an increase of 11 p.c. over 1964, prime contracts accounted for \$46,076,000 and subcontracts placed in Canada by overseas countries, for \$21,660,000. The major purchases in this group were for *Caribou*, *Otter* and *Twin Otter* aircraft, F-104G simulator spares, rocket launchers and nosecon assemblies for the NATO M-72 light antitank weapon program, navigational equipment for the F-104G aircraft, position and homing indicators, spares for vehicles, aircraft engines and spares, MK44 torpedoes and spares, and a contribution to the shared development of the CL-89 surveillance drone.

During 1965, Canadian defence contracts placed in overseas countries on behalf of the Canadian Armed Services amounted to \$51,011,000, consisting of \$31,259,000 in prime contracts and \$19,752,000 in sub-contracts, so that Canada benefited from this exchange of defence contracting by \$16,725,000.

### PART III.—CIVIL EMERGENCY PLANNING (CIVIL DEFENCE)

The present arrangements for civil emergency planning in Canada took form in 1958 following an analysis by the Canadian Government of the kind of military and civilian arrangements necessary to prepare the nation for the possibility of nuclear war. This review led to a major re-arrangement of federal civil defence functions, together with an offer from the Federal Government to assume certain responsibilities previously borne by provinces and municipalities. The reorganization, which became effective on Sept. 1, 1959, was based on the principles that: (1) civil defence was properly a function or activity of government rather than a separate organization as such, and (2) this function should be divided into clearly defined tasks assigned to the appropriate levels of government, and at each governmental level made the responsibility of those departments or agencies best able to undertake and discharge them.

The Canada Emergency Measures Organization is the federal co-ordinating agency for all civil emergency planning. The Civil Emergency Measures Planning Order (Order in Council PC 1965-1041) dated June 8, 1965, defines the functions of the Canada Emergency Measures Organization, designates it as a department for administrative purposes and places it under the control and supervision of the Minister of Industry. Its functions include:—

- (1) the development of policies and a program to ensure the continuity of government in an emergency;
- (2) the co-ordination of civil emergency planning and training within the Federal Government;
- (3) in conjunction with provincial authorities, the development of policies and a program for the control of civil road transport resources;

- (4) the provision of assistance and guidance to provincial government and municipalities in respect of the preparation of civil emergency measures in matters that are not the responsibility of a department of the Federal Government;
- (5) the provision of general liaison with other countries and with NATO on matters relating to civil emergency measures; and
- (6) the responsibility for the direction and administration of the Canadian Emergency Measures College at Arnprior, Ont.

The Civil Emergency Measures Planning Order also defines the civil emergency powers, duties and functions of the Ministers of federal departments and agencies having immediate responsibilities in the event of a war emergency. Included in this category are the Departments of Agriculture, Defence Production, External Affairs, Finance, Fisheries, Justice, Labour, National Defence, National Health and Welfare, Post Office, Public Works, Transport, the Bank of Canada, Canadian Broadcasting Corporation, Central Mortgage and Housing Corporation and the Royal Canadian Mounted Police. In view of the Government Organization Act, 1966, it is anticipated the Department of Manpower and Immigration and the Department of the Solicitor General also will be included in this category.

Certain emergency functions of government are a projection of normal provincial peacetime responsibility. The following represent responsibilities of this kind, and are the concern of provincial authorities with such federal assistance as may be necessary:—

- (1) preservation of law and order and the prevention of panic by the use of provincial and municipal police and special constables, with whatever support is necessary and feasible from the Royal Canadian Mounted Police and the Armed Services at provincial request;
  - (2) control of road traffic, except in areas damaged or covered by heavy fallout, including special measures to assist in the emergency movement of people from areas likely to be attacked or affected by heavy fallout;
  - (3) reception services, including arrangements for providing accommodation, emergency feeding and other emergency supplies and welfare services for people who have lost or left their homes or who require assistance because of the breakdown of normal facilities;
  - (4) organization and control of medical services, hospitals and public health measures;
  - (5) maintenance, clearance and repair of highways;
  - (6) organization of municipal and other services for the maintenance and repair of water and sewerage systems; and
  - (7) organization of municipal and other fire fighting services, and control over and direction of these services in wartime, except in damaged or heavy fallout areas, where fire fighting services would be under the direction of the Army as part of the re-entry operation.
-



# CHAPTER XXVII.—OFFICIAL SOURCES OF INFORMATION AND MISCELLANEOUS DATA

## CONSPECTUS

	PAGE		PAGE
<b>Part I.—Official Sources of Information..</b>	1185	<b>Part II.—Special Material Published in Former Editions of the Canada Year Book.....</b>	1236
SECTION 1. BOOKS ABOUT CANADA.....	1185	<b>Part III.—Register of Official Appointments.....</b>	1240
SECTION 2. FEDERAL GOVERNMENT INFORMATION SERVICES.....	1201	<b>Part IV.—Federal Legislation, 1966-67....</b>	1247
SECTION 3. SALE OF OFFICIAL PUBLICATIONS	1202	<b>Part V.—Canadian Chronology.....</b>	1254
DIRECTORY OF SOURCES OF OFFICIAL INFORMATION.....	1204		

## PART I.—OFFICIAL SOURCES OF INFORMATION

### Section 1.—Books About Canada

This basic list of books about Canada, contributed by the National Library (February 1967), includes a selection of publications grouped alphabetically by author and arranged under the subject classifications of Biography, Country and People, Economics, External Relations, Government and Politics, History, Literature and the Arts, and General Reference Works. The selection represents many aspects of Canadian life, emphasizes the latest editions of books published within the past ten years, and includes titles issued in either or both English and French, accompanied by the publisher's address.

It should be noted that, although this list is now an annual feature of the Year Book, it is not a cumulative presentation; it is limited to about 480 titles, necessitating the omission of some items that appeared the preceding year to permit the inclusion of others. For additional titles, the reader should consult the lists of books in earlier Year Books or one or more of the bibliographical collections listed below under the heading "General Reference Works", particularly the monthly or annual editions of *Canadiana* published by the National Library.

### Biography

- BARNARD, Julianne. *Mémoires Chapais*. Montréal, Fides, 1961-64. 3 v.  
 BARRETTE, Antonio. *Mémoires*. T. 1. Montréal, Beauchemin, 1966. 448 p.  
 BEAL, J. R. *The Pearson phenomenon*. Toronto, Longmans, 1964. 210 p.  
*Biographies canadiennes-françaises*. 20e éd. Montréal, 1965. 1347 p.  
 BISHOP, Morris. *Champlain; the life of fortitude*. Toronto, McClelland and Stewart, 1963. 308 p. (Carleton library, no. 4)  
 BISHOP, W. A. *The courage of the early morning, a son's biography of a famous father: the story of Billy Bishop*. Toronto, McClelland and Stewart, 1965. 211 p.  
 BOUCHARD, T. D. *Mémoires de T. D. Bouchard*. Montréal, Beauchemin, 1960. 3 v.  
 BRADDON, Russell. *Roy Thomson of Fleet Street*. London, Collins, 1965. 396 p.

- BROWN, Florence M. *Breaking barriers; Eric Brown and the National Gallery*. Ottawa, Society for Art Publications, 1964. 113 p.
- CAMPBELL, Marjorie Wilkins. *McGillivray, Lord of the Northwest*. Toronto, Clarke, Irwin, 1962. 337 p.
- CAMPBELL, Marjorie Wilkins. *No compromise; the story of Colonel Baker and the CNIB*. Toronto, McClelland and Stewart, 1965. 217 p.
- Canadian writers. Écrivains canadiens*. A biographical dictionary edited by—un dictionnaire biographique rédigé par Guy SYLVESTRE, Brandon CONRON, C. F. KLINGCK. New ed. rev. and enl. Nouv. éd. rev. et augm. Toronto, Ryerson Press, 1966. 186 p. (Articles by French language authors are in French.)
- CARR, Emily. *Hundreds and thousands; the journals of Emily Carr*. Toronto, Clarke, Irwin, 1966. 332 p.
- COWAN, John. *Canada's Governors-General, Lord Monck to General Vanier*. Centennial ed. Toronto, York Pub. Co., 1965. 260 p.
- CREIGHTON, Donald. *John A. Macdonald*. Toronto, Macmillan, 1952-55. 2 v.
- DAWSON, R. M. *William Lyon Mackenzie King; a political biography*. Vol. 1, 1874-1923. Vol. 2, 1923-1932 by H. Blair NEATBY. Toronto, University of Toronto Press, 1958-63. 2 v.
- Dictionary of Canadian biography*. General editor, G. W. BROWN. Directeur adjoint, Marcel TRUDEL. Vol. 1. 1000 to 1700. Toronto, University of Toronto Press, 1965. (To be complete in 24 v.)
- Dictionnaire biographique du Canada*. General editor, G. W. BROWN. Directeur adjoint, Marcel TRUDEL. T. 1. 1000 à 1700. Québec, Presses de l'Université Laval, 1966. (L'ouvrage entier doit comprendre 24 v.)
- DRURY, E. C. *Farmer premier; memoirs of the Honourable E. C. Drury*. Toronto, McClelland and Stewart, 1966. 198 p.
- FALMAGNE, Thérèse. *Un marquis du grand siècle, Jacques-René de Brisay de Denonville, gouverneur de la Nouvelle-France 1637-1710*. Montréal, Éditions Leméac, 1965. 341 p.
- GAGNON, M. A. *Le ciel et l'enfer d'Arthur Buies*. Québec, Presses de l'Université Laval, 1965. 360 p. (Vie des lettres canadiennes, 2)
- GILBERT, Heather M. *Awakening continent; the life of Lord Mount Stephen*. Vol. 1. 1829-91. Aberdeen, Aberdeen University Press, 1965. 314 p. (Vol. 2 will not be completed until the private papers of J. J. Hill are made available in 1981.)
- GRAHAM, Roger. *Arthur Meighen; a biography*. Toronto, Clarke, Irwin, 1960-65. 3 v.
- GRAY, J. M. *Lord Selkirk of Red River*. Toronto, Macmillan, 1963. 388 p.
- Great Canadians; a century of achievement*. Selected by Vincent MASSEY and others. Illustrated by Franklin ARBUCKLE. Toronto, Canadian Centennial Pub. Co., 1965. 122 p. (The Canadian centennial library)
- GRENON, Hector. *Chroniques vécues; des modestes origines d'une élite urbaine*. T. 1. Montréal Éditions de l'Homme, 1966. 494 p.
- INNIS, Mary Quayle, ed. *The clear spirit; twenty Canadian women and their times*. Toronto, University of Toronto Press, 1966. 304 p. (Includes two chapters in French)
- LAMONTAGNE, Roland. *La Galissonnière et le Canada*. Montréal, Presses de l'Université de Montréal, 1962. 104 p.
- LA ROQUE DE ROQUEBRUNE, Robert. *Quartier Saint-Louis; récit par Robert de Roquebrune pseud*. Montréal, Fides, 1966. 199 p. (Collection du nénuphar, 30) (Suite de Testament de mon enfance)
- LUCHKOVICH, Michael. *A Ukrainian Canadian in Parliament; memoirs of Michael Luchkovich*. Toronto, Ukrainian Canadian Research Foundation, 1965. 128 p. (Ukrainian Canadian Research Foundation. The Canadian centennial series, 2)
- MCGREGOR, J. G. *Peter Fidler: Canada's forgotten surveyor, 1769-1822*. Toronto, McClelland and Stewart, 1966. 265 p.
- MACKENZIE, Sir Alexander. *First man west; Alexander Mackenzie's journal of his voyage to the Pacific Coast of Canada in 1793*. Edited by Walter SHEPPE. Montreal, McGill University Press, 1963. 366 p.
- MASSEY, Vincent. *What's past is prologue; memoirs*. Toronto, Macmillan, 1963. 540 p.
- NULIGAK, I, Nuligak. Translated from the Eskimo by Maurice METAVER. Illus. by EKOOTAK. Toronto, P. Martin Associates, 1966. 208 p.
- Our living tradition*. First to fifth series. Toronto, University of Toronto Press, 1957-65. 5 v. in 4. (Public lectures given at Carleton University on prominent Canadians)
- POPE, Sir Joseph. *Public servant; the memoirs of Sir Joseph Pope*. Edited and completed by Maurice POPE. Toronto, Oxford University Press, 1960. 312 p.
- POPE, Maurice. *Soldiers and politicians; memoirs*. Toronto, University of Toronto Press, 1962. 462 p.

- POWER, C. G. *A party politician; the memoirs of Chubby Power*. Edited by Norman WARD. Toronto, Macmillan, 1966. 419 p.
- RILEY, Very Rev. C. E. *Derwyn Trevor Owen, Primate of All Canada*. Toronto, Ryerson Press, 1966. 175 p.
- SCHULL, J. J. *Laurier; the first Canadian*. Toronto, Macmillan, 1965. 658 p.
- SHERMAN, Patrick. *Bennett by Paddy Sherman*. Toronto, McClelland and Stewart, 1966. 316 p.
- SHRIVE, F. N. *Charles Mair; literary nationalist*. Toronto, University of Toronto Press, 1965. 309 p.
- SIMCOE, Elizabeth P. *Diary*. Edited by Mary Quayle INNIS. With illus. from the original ms. Toronto, Macmillan, 1965. 223 p.
- SISSONS, C. B. *Nil alienum; the memoirs of C. B. Sissons*. Toronto, University of Toronto Press, 1964. 260 p.
- SKELTON, O. D. *Life and times of Sir Alexander Tilloch Galt*. Edited and with an introd. by Guy MACLEAN. Toronto, McClelland and Stewart, 1966. 293 p. (The Carleton library, no. 26)
- SKELTON, O. D. *Life and letters of Sir Wilfrid Laurier*. Ed. by D. M. L. FARR. (Abridged ed.) Toronto, McClelland and Stewart, 1965. 2 v. (Carleton library, no. 21-22)
- STANLEY, G. F. G. *Louis Riel*. Toronto, Ryerson Press, 1963. 433 p.
- STEFANSSON, Vilhjalmur. *Discovery; the autobiography of Vilhjalmur Stefansson*. New York, McGraw-Hill, 1964. 411 p.
- THOMSON, D. C. *Alexander Mackenzie, clear Grit*. Toronto, Macmillan, 1960. 436 p.
- WALLACE, Elizabeth. *Goldwin Smith, Victorian liberal*. Toronto, University of Toronto Press, 1957. 297 p.
- WALLACE, W. S., ed. *The Macmillan dictionary of Canadian biography*. 3d ed. Toronto, Macmillan, 1963. 822 p.
- WATKINS, Ernest. *R. B. Bennett, a biography*. Toronto, Kingswood House, 1963. 271 p.
- Who's who in Canadian Jewry, 1965*. Compiled by the Canadian Jewish Literary Foundation. Montreal, Jewish Institute of Higher Research, Central Rabbinical Seminary of Canada, 1965. 525 p.
- WORTHINGTON, Larry. "Worthy"; a biography of Major-General F. F. Worthington, C.B., M.C., M.M. Toronto, Macmillan, 1961. 236 p.

### Country and People

- ABRAHAMSON, Una. *God bless our home; domestic life in nineteenth century Canada*. Toronto, Burns and MacEachern, 1966. 233 p.
- ANGERS, Pierre. *Problèmes de culture au Canada français*. Montréal, Beauchemin, 1960. 117 p.
- ARSENAULT, Bona. *Histoire et généalogie des Acadiens*. Québec, Conseil de la vie française en Amérique, 1965. 2 v.
- ARSENAULT, Bona. *History of the Acadians*. Québec, Conseil de la vie française en Amérique, 1966. 265 p. (Translation and revision of the historical part of *Histoire et généalogie des Acadiens*)
- BELKIN, Simon. *Through narrow gates; a review of Jewish immigration, colonization and immigrant aid work in Canada (1840-1940)*. Montreal, Canadian Jewish Congress and the Jewish Colonization Association, 1966. 235 p.
- BLISHEN, B. R., ed. *Canadian society, sociological perspectives*. Toronto, Macmillan, 1961. 622 p.
- BOULIZON, Guy, et ADAMS, Geoffrey. *Canada, 20ème siècle—20th century*. Texte français de Guy BOULIZON. English text by Geoffrey ADAMS. Paris, Éditions de la Pensée moderne; Montréal, Beauchemin, 1964. 1 v.
- BRUNET, Michel. *Canadians et Canadiens; études sur l'histoire et la pensée des deux Canadas*. Montréal, Fides, 1960. 175 p. (Bibliothèque économique et sociale)
- CANADA. Department of Forestry. *Native trees of Canada*. 6th ed. Ottawa, Queen's Printer, 1961. 291 p.
- CANADA. Ministère des Forêts. *Arbres indigènes du Canada*. 3e éd. Ottawa, Imprimeur de la Reine, 1961. 289 p.
- CARVER, H. S. M. *Cities in the suburbs*. Toronto, University of Toronto Press, 1962. 120 p.
- CASTEL, J. G. *The civil law system of the Province of Quebec*. Toronto, Butterworth, 1961. 613 p.
- CHAPUT-ROLLAND, Solange. *Mon pays, Québec ou le Canada?* Montréal, Cercle du Livre de France, 1966. 181 p.
- CHAPUT-ROLLAND, Solange. *My country, Canada or Quebec?* Toronto, Macmillan, 1966. 118 p.
- CLARK, S. D. *The suburban society*. Toronto, University of Toronto Press, 1966. 233 p.
- Commission on the Financing of Higher Education. *Financing higher education in Canada; being the report of a Commission to the Association of Universities and Colleges of Canada*. Toronto, University of Toronto Press, 1965. 98 p.



- Commission sur le financement de l'enseignement supérieur au Canada. *Le financement de l'enseignement supérieur au Canada; rapport d'une commission d'enquête à l'Association des Universités et Collèges du Canada*. Québec, Presses de l'Université Laval, 1965. 112 p.
- DESBARATS, P. H. *The state of Quebec; a journalist's view of the quiet revolution*. Toronto, McClelland and Stewart, 1965. 188 p.
- DE VOLPI, C. P. *The Niagara Peninsula; a pictorial record*. Montreal, Dev-Sco Publications, 1966. 259 p. (Distributed by Longmans, Canada)
- DE VOLPI, C. P., comp. *Toronto, a pictorial record; historical prints and illustrations of the City of Toronto . . . 1813-1882*. Montreal, Dev-Sco Publications, 1965. 259 p.
- DROLET, Antonio. *Les bibliothèques canadiennes, 1604-1960*. Montréal, Cercle du livre de France, 1965. 234 p.
- EGGLESTON, Wilfrid. *Canada's nuclear story*. Toronto, Clarke, Irwin, 1965. 368 p.
- ELKIN, Frederick. *The family in Canada; an account of present knowledge and gaps in knowledge about Canadian families*. Ottawa, Canadian Conference on the Family, 1964. 192 p.
- ELKIN, Frederick. *La famille au Canada; données, recherches et lacunes du savoir sur les familles au Canada*. Ottawa, Congrès canadien de la famille, 1964. 208 p.
- ELLIS, F. H. *Canada's flying heritage*. 2d ed. Toronto, University of Toronto Press, 1961. 398 p.
- FALARDEAU, J. C. *Roots and values in Canadian lives*. Toronto, University of Toronto Press, 1961. 62 p. (Alan B. PLAUNT memorial lectures)
- GARIGUE, Philippe. *L'option politique du Canada français; une interprétation de la survivance nationale*. Montréal, Éditions du Lévrier, 1963. 174 p.
- GILLET, Margaret. *A history of education: thought and practice*. Toronto, McGraw-Hill, 1966. 443 p.
- GODFREY, W. E. *The birds of Canada*. Colour illus. by J. A. CROSBY, line drawings by S. D. MACDONALD. Ottawa, Queen's Printer, 1966. 428 p. (National Museum of Canada. Bull. no. 203. Bull. ser. no. 73)
- GUILLET, E. C. *The story of Canadian roads*. Toronto, University of Toronto Press, 1966. 246 p.
- HARRIS, R. S., ed. *Changing patterns of higher education*. Toronto, University of Toronto Press, 1966. 106 p.
- HARVEY, J. C. *Visages du Québec*. Photos de Marcel COGNAC. Montréal, Cercle du livre de France, 1965. 202 p.
- HARVEY, J. C. *The many faces of Quebec*. Translated by Alta Lind Cook. Photos by Marcel COGNAC. Toronto, Macmillan, 1966. 202 p.
- HOLT, Simma. *Terror in the name of God; the story of the Sons of Freedom Doukhobors*. Toronto, McClelland and Stewart, 1964. 312 p.
- HONIGMANN, J. J., and HONIGMANN, Irma. *Eskimo townsmen*. Ottawa, Canadian Research Centre for Anthropology, University of Ottawa, 1965. 278 p.
- IGLAUER, Edith. *The new people; the Eskimo's journey into our time*. Garden City, N. Y., Doubleday, 1966. 205 p. (About Canadian Eskimos)
- IRVING, J. A. *Mass media in Canada*. Toronto, Ryerson Press, 1962. 236 p.
- JENNESS, Diamond. *The Indians of Canada*. 5th ed. Ottawa, Queen's Printer, 1960. 452 p.
- JENNESS, Diamond. *People of the twilight (Eskimos)*. Chicago, University of Chicago Press, 1959. 250 p. (Phoenix books)
- KEMP, V. A. M. *Scarlet and Stetson; the Royal North-West Mounted Police on the prairies*. Toronto, Ryerson Press, 1964. 280 p.
- KRISTJANSON, Wilhelm. *The Icelandic people in Manitoba*. Winnipeg, Wallingford Press, 1965. 557 p.
- LAFORTUNE, François. *Où la lumière chante*. Photos: F. LAFORTUNE. Textes: Gilles VIGNEAULT. Québec, Presses de l'Université Laval, 1966. 1 v. en majeure part. ill. (La ville de Québec).
- LANDSDOWNE, J. F., and LIVINGSTON, J. A. *Birds of the northern forest*. Toronto, McClelland and Stewart, 1966. 247 p.
- LAPIERRE, Laurier, ed. *French-Canadian thinkers of the nineteenth and twentieth centuries*. Montreal, McGill University Press, 1966. 117 p. (Four o'clock lectures, 1)
- LASKIN, R. J., ed. *Social problems; a Canadian profile*. Toronto, McGraw-Hill, 1964. 472 p.
- MCALLISTER, R. I. ed. *Newfoundland and Labrador, the first fifteen years of Confederation*. St. John's, Dicks, 1966. 247 p.
- MCGRATH, W. T., ed. *Crime and its treatment in Canada*. Toronto, Macmillan, 1965. 510 p.
- MCLEAN, E. D. *The living past of Montreal. Le passé vivant de Montréal*. Version française de Paul ROUSSEL. Montreal, McGill University Press, 1964. 1 v. (unpaged) (text bilingual)
- MASTERS, D. C. C. *Protestant church colleges in Canada; a history*. Toronto, University of Toronto Press, 1966. 225 p. (Studies in the history of higher education in Canada, 4)
- MOIR, J. S., ed. *The Cross in Canada*. Toronto, Ryerson Press, 1966. 247 p.

- MONTREAL. *L'âge d'or/The golden years*. English text by Leonard L. KNOTT. Texte français de Huguette LAVIGUEUR. Photos by Armour LANDRY. Toronto, McClelland and Stewart, 1965. 192 p.
- MORTON, W. L. *The Canadian identity*. Toronto, University of Toronto Press, 1962. 125 p. (Canadian university paperbooks, 1)
- National Conference on Canadian Slavs. *Slavs in Canada; proceedings*. 1st; 1965. Edmonton, Inter-University Committee on Canadian Slavs, 1966. 171 p. biennial (Includes one paper in French)
- NEATBY, L. H. *Conquest of the last frontier*. Don Mills, Ont., Longmans, 1966. 425 p. (History of Arctic exploration in the nineteenth century)
- PARKIN, J. H. *Bell and Baldwin; their development of aerodromes at Baddeck, Nova Scotia*. Toronto, University of Toronto Press, 1964. 555 p.
- PERCIVAL, W. P. *The lure of Quebec*. Rev. ed. Toronto, Ryerson Press, 1965. 217 p.
- PETERSON, R. L. *The mammals of eastern Canada*. Toronto, Oxford University Press, 1966. 465 p.
- PORTER, J. A. *The vertical mosaic; an analysis of social class and power in Canada*. Toronto, University of Toronto Press, 1965. 626 p. (Studies in the structure of power; decision-making in Canada, 2)
- POTVIN, Berthe. *La vie des Canadiens-français au début du siècle*. Montréal, Agence de distribution populaire, 1966. 126 p.
- PUTNAM, D. F., ed. *Canadian regions; a geography of Canada*. 7th ed. Toronto, Dent, 1965. 601 p.
- Québec (Ville) Université Laval. Faculté des sciences de l'éducation. *L'éducation dans un Québec en évolution*. Québec, Presses de l'Université Laval, 1966. 245 p. (Les Dossiers pédagogiques de Laval 1)
- QUÉBEC. Ministère des Affaires culturelles. *Collection, art, vie et sciences au Canada français, sous la direction de Geneviève de la Tour-Fondue-Smith*. Québec, 1964. 6 v.
- Recherches sociographiques. Colloque. 3e, Québec, 1966. *Le pouvoir dans la société canadienne-française*. Ouvrage réalisé sous la direction de Fernand DUMONT et Jean-Paul MONTMINY. Québec, Presses de l'Université Laval, 1966. 252 p.
- ROSENBERG, S. E., ed. *A humane society*. Toronto, University of Toronto Press, 1962. 167 p.
- ROWE, F. W. *The development of education in Newfoundland*. Toronto, Ryerson Press, 1964. 225 p.
- ROYAL SOCIETY OF CANADA. *Pioneers of Canadian science; symposium presented in 1964. Les pionniers de la science canadienne; colloque présenté en 1964*. Edited by G. F. G. STANLEY. Toronto, University of Toronto Press, 1966. 146 p. (Its "Studia varia" series, 9)
- RUSSELL, Franklin. *The secret islands*. Toronto, McClelland and Stewart, 1965. 238 p. (Description of islands off the eastern coast of Canada and Newfoundland)
- SACK, B. G. *History of the Jews in Canada*. Rev. ed. Translated by Ralph NOVEK. Montreal, Harvest House, 1965. 299 p.
- SISSONS, C. B. *Church and state in Canadian education; an historical study*. Toronto, Ryerson Press, 1959. 414 p.
- SMITH, I. N., ed. *The unbelievable land; 29 experts bring us closer to the Arctic*. Ottawa, Queen's Printer, 1964. 140 p.
- STEACIE, E. W. R. *Science in Canada; selections from the speeches of E. W. R. Steacie*. Edited by J. D. BABBITT. Toronto, University of Toronto Press, 1965. 198 p.
- SYLVESTRE, Guy, éd. *Structures sociales du Canada français; études de membres de la Section I de la Société royale du Canada*. Québec, Presses de l'Université Laval; Toronto, University of Toronto Press, 1966. 120 p.
- THISTLE, M. W. *The inner ring; the early history of the National Research Council of Canada*. Toronto, University of Toronto Press, 1966. 435 p.
- THOMSON, D. W. *Men and meridians; the history of surveying and mapping in Canada*. Ottawa, Queen's Printer, 1966. 344 p. (Issued by the Dept. of Energy, Mines and Resources)
- THORNTON, Mildred V. *Indian lives and legends*. Vancouver, Mitchell Press, 1966. 301 p. (On the Indians of British Columbia)
- TODD, W. E. C. *Birds of the Labrador Peninsula and adjacent areas*. Toronto, University of Toronto Press, 1963. 819 p.
- VACHON, André. *Histoire du notariat canadien, 1621-1960*. Éd. rev. Québec, Presses de l'Université Laval, 1962. 209 p.
- VAN DER AA, Hans. *Montréal*. Texte français par Robert CHOQUETTE. English text by Leslie ROBERTS. Montréal, Éditions Leméac, 1965. 1 v. (non paginé)
- VARLEY, Peter. *Canada*. Toronto, Macmillan, 1964. 57 p. 184 plates (part col.)
- VARLEY, Peter. *Le Canada*. Traduction de Pierre TISSEYRE. Londres, Thames and Hudson; Montréal, Cercle du Livre de France, 1965. 57 p. 178 photogr., 8 hors-texte en coul.
- WILSON, D. J. *The Church grows in Canada*. Toronto, Ryerson Press, 1966. 224 p.

## Economics

- AITKEN, H. G. J. *American capital and Canadian resources*. Cambridge, Harvard University Press, 1961. 217 p.
- ALLAN, J. R. *The income tax burden on Canadian stockholders*. Toronto, Canadian Tax Foundation, 1966. 173 p. (Queen's University. Papers on taxation and public finance, no. 2)
- ANDERSON, W. J. *Canadian wheat in relation to the world's food production and distribution*. Saskatoon, Modern Press, 1964. 100 p.
- ASHLEY, C. A., and SMAILS, R. G. H. *Canadian crown corporations; some aspects of their administration and control*. Toronto, Macmillan, 1965. 360 p.
- ASHLEY, C. A. *The first twenty-five years; a study of Trans-Canada Air Lines*. Toronto, Macmillan, 1963. 72 p.
- BELLAN, R. C. *Principles of economics and the Canadian economy*. Toronto, McGraw-Hill, 1960, 540 p.
- BLAIR, C. L. *Canada's natural wealth*. Toronto, McGraw-Hill, 1964. 160 p.
- BOYLE, Thomas. *Justice through power; a study of labour in its present situation*. Toronto, Longmans, 1961. 248 p.
- BREWIS, T. H., et al. *Canadian economic policy*. Rev. ed. Toronto, Macmillan, 1965. 463 p. (Statistical appendix by J. E. GANDER)
- BROUILLETTE, Benoît. *Les industries manufacturières du Canada*. Rééd. mise à jour et augm. Montréal, École des hautes études commerciales, 1965. 181 p. (Montréal. École des hautes études commerciales. Institut d'économie appliquée. Étude n° 10)
- CAIRNS, J. P., and BINHAMMER, H., eds. *Canadian banking & monetary policy, recent readings*. Toronto, McGraw-Hill, 1965. 377 p.
- CAMU, Pierre, WEEKS, E. P., and SAMETZ, Z. W. *Economic geography of Canada*. Toronto, Macmillan, 1964. 393 p.
- CANADA. Department of Agriculture. *Co-operatives in Canada*. Ottawa, Queen's Printer, 1962. 31 p. (Publication 1119)
- CANADA. Ministère du Travail. Direction de l'économie et de la recherche. *Conditions de vie et de travail au Canada*. Ottawa, Imprimeur de la Reine, 1962. 78 p.
- CARROTHERS, A. W. R. *Collective bargaining law in Canada*. Toronto, Butterworths, 1965. 553 p.
- Congrès des relations industrielles de l'Université Laval. 20e, Québec, 1965. *Le code du travail du Québec (1965)*. Québec, Presses de l'Université Laval, 1965. 271 p.
- CRYSDALE, R. C. S. *The industrial struggle and Protestant ethics in Canada*. Toronto, Ryerson Press, 1961. 193 p.
- CURRIE, A. W. *Canadian economic development from the French regime to the present-day Canada of ten provinces*. 4th ed. Toronto, Nelson, 1963. 470 p.
- DENISON, Merrill. *Canada's first bank; a history of the Bank of Montreal*. v. 1. Toronto, McClelland and Stewart, 1966. 471 p.
- DENISON, Merrill. *La première banque du Canada; histoire de la Banque de Montréal*. v. 1. Trad. de l'anglais par Paul A. HORGUELIN. . . Toronto, McClelland and Stewart, 1966. 471 p.
- DENISON, Merrill. *The people's power; the history of Ontario Hydro*. Toronto, McClelland and Stewart, 1960. 295 p.
- DHALLA, N. K. *These Canadians; a sourcebook of marketing and socio-economic facts*. Toronto, McGraw-Hill, 1966. 749 p.
- DUE, J. F. *The intercity electric railway industry in Canada*. Toronto, University of Toronto Press, 1966. 118 p. (Canadian studies in economics, 18)
- FIRESTONE, O. J. *Broadcast advertising in Canada; past and future growth*. Ottawa, University of Ottawa Press, 1966. 358 p. (Social science studies, no. 3) (Includes some text in French)
- FULLERTON, D. H. *The bond market in Canada; a study of the institutions, machinery, techniques and problems involved in the issuing and marketing of bonds and debentures*. Toronto, Carswell, 1962. 379 p.
- GALARNEAU, Claude, et LAVOIE, Elzéar, eds. *France et Canada français du XVIe au XXe siècle*. Québec, Presses de l'Université Laval, 1966. 322 p. (Cahiers de l'Institut d'histoire, 7)
- GALBRAITH, J. A. *The economics of banking operations; a Canadian study*. Montreal, McGill University Press, 1963. 510 p.
- GLAZEBROOK, G. P. de T. *A history of transportation in Canada*. New ed. Toronto, McClelland and Stewart, 1964. 2 v.
- HALL, L. G., and SPURR, G. H. *The elements of insured pension plans in Canada*. 2d ed. Don Mills, Ont. Institute of Chartered Life Underwriters of Canada, 1965. 112, 103 p.
- HALL, L. G., et SPURR, G. H. *Les éléments des régimes de pension assurés au Canada*. 2e éd. Don Mills, Ont. Institut des assureurs-vie agréés du Canada, 1965. 121, 63 p.



- INNIS, H. A. *Essays in Canada's economic history*. Edited by Mary Q. INNIS. Toronto, University of Toronto Press, 1962. 418 p. (Canadian university paperbooks, 6)
- JOHNSON, H. G. *The Canadian quandary; economic problems and policies*. Toronto, McGraw-Hill, 1963. 352 p.
- LEIGHTON, D. S. R., and THAIN, Donald H. *Canadian problems in marketing*. 2e ed. Toronto, McGraw-Hill, 1965. 811 p.
- LEONARD, W. G. *Financial management in Canadian business*. Toronto, McGraw-Hill, 1965. 235 p.
- LIVINGSTON, K. C., and GRAHAM, T. C., eds. *Manufacturing processes in Canada*. Toronto, University of Toronto Press, 1960. 304 p.
- MACKINTOSH, W. A. *The economic background of Dominion-provincial relations; Appendix III of the Royal Commission report on Dominion-provincial relations*. Toronto, McClelland and Stewart, 1964. 191 p. (Carleton library, no. 13)
- MARION, G  rald. *R  partition fonctionnelle des revenus; analyse de la part du travail au Canada*. Montr  al, Presses de l'Universit   de Montr  al, 1965. 125 p.
- NEUFELD, E. P., ed. *Money and banking in Canada; historical documents and commentary*. Toronto, McClelland and Stewart, 1964. 369 p. (Carleton library no. 17)
- OUELLET, Fernand. *Histoire   conomique et sociale du Qu  bec 1760-1850; structures et conjoncture*. Montr  al, Fides, 1966. 639 p. (Histoire   conomique et sociale du Canada fran  ais)
- PETCHINIS, S. G. *The economics of labour; 1925-employment and wages in Canada*. Toronto, McGraw-Hill, 1965. 412 p.
- PLOTNICK, A. R. *Petroleum; Canadian markets and United States foreign trade policy*. Seattle, University of Washington Press, 1964. 172 p.
- POTTER, C. C. *Finance and business administration in Canada*. Scarborough, Ont., Prentice-Hall, 1966. 578 p.
- Private Planning Association of Canada. Canadian Trade Committee. *Canadian economic policy since the war; a series of six public lectures in commemoration of the twentieth anniversary of the white paper on employment and income of 1945*. Montreal, 1966. 154 p.
- PUGSLEY, W. H. *Canadian business organization and management*. Toronto, McGraw-Hill, 1965. 547 p.
- RICH, E. E. *Montreal and the fur trade*. Montreal, McGill University Press, 1966. 99 p. (Beatty memorial lectures, 1963-64)
- ROSENBLUTH, G., and THORBURN, H. G. *Canadian anti-combines administration, 1952-60*. Toronto, University of Toronto Press, 1963. 106 p.
- RYAN, William F., s.j. *The clergy and economic growth in Quebec (1896-1914)*. Qu  bec, Presses de l'Universit   Laval, 1966. 348 p.
- SASKATCHEWAN WHEAT POOL. *The Saskatchewan Wheat Pool and its accomplishments*. Regina, 1964. 40 p.
- SAURIOL, Paul. *La nationalisation de l'  lectricit  *. Montr  al,   ditions de l'Homme, 1962. 120 p.
- SAURIOL, Paul. *The nationalization of electric power*. Montreal, Harvest House, 1962. 95 p. (French Canadian Renaissance, v. 3)
- STEVENS, G. R. *Canadian National Railways*. Toronto, Clarke, Irwin, 1960-62. 2 v.
- TORONTO UNIVERSITY. Centre for Industrial Relations. *Industrial relations: challenges and responses*, edited by J. H. G. GRISPO. Toronto, University of Toronto Press, 1966. 156 p.
- TUCKER, G. N. *The Canadian commercial revolution, 1845-1851*. Edited by H. G. J. AITKEN. Toronto, McClelland and Stewart, 1964. 186 p. (Carleton library, no. 19)
- UREN, P. E., ed. *East-West trade; a symposium*. Introd. by Mitchell W. SHARP. Toronto, Canadian Institute of International Affairs, 1966. 181 p. (Contemporary affairs, no. 36)
- WILSON, G. W., GORDON, Scott, and JUDEK, Stanislaw. *Canada: an appraisal of its needs and resources*. Avec un commentaire par A. BRETON. New York, Twentieth Century Fund; Toronto, University of Toronto Press, 1965. 453 p.
- WONNACOTT, G. P. *The Canadian dollar, 1948-1958*. Rev. ed. Toronto, University of Toronto Press, 1965. 339 p.
- WOOD, W. D., and THOMAN, R. S., eds. *Areas of economic stress in Canada*. Proceedings of a Conference, Queen's University, at Kingston, Ontario. Kingston, Industrial Relations Centre, Queen's University, 1965. 221 p.
- WOODS, H. D., and OSTRY, Sylvia. *Labour policy and labour economics in Canada*. Toronto, Macmillan, 1962. 534 p.

### External Relations

- Banff Conference on World Development. 3d, Banff, Alta., 1965. *Canada's role as a middle power*. Edited by J. K. GORDON. Toronto, Canadian Institute of International Affairs, 1966. 212 p. (Contemporary affairs, no. 35)

- BREBNER, J. B. *North Atlantic triangle; the interplay of Canada, the United States and Great Britain*. Toronto, McClelland and Stewart, 1966. 377 p. (The Carleton library, no. 30)
- BROWN, R. C. *Canada's national policy, 1883-1900; a study in Canadian-American relations*. Princeton, Princeton University Press, 1964. 436 p.
- CADIEUX, Marcel. *The Canadian diplomat; an essay in definition*. Trans. by Archibald DAY. Toronto, University of Toronto Press, 1963. 113 p.
- CADIEUX, Marcel. *Le diplomate canadien—éléments d'une définition*. Montréal, Fides, 1962. 127 p.
- CANADA. Department of External Affairs. *Canada and the United Nations*. Ottawa, Queen's Printer. Annual.
- CANADA. Ministère des Affaires extérieures. *Le Canada et les Nations unies*. Ottawa, Imprimeur de la Reine. Annuel.
- Canada in world affairs*. Toronto, Oxford University Press, 1941-  
 v. 1 and 2 out of print.  
 v. 3. *September 1941-May 1944*, by C. C. LINGARD and R. G. TROTTER. 1950. 332 p.  
 v. 4. *From Normandy to Paris, 1944-46*, by F. H. SOWARD. 1950. 372 p.  
 v. 5. *From U.N. to NATO, 1946-49*, by R. A. SPENCER. 1959. 460 p.  
 v. 6. *1949 to 1950*, by W. E. C. HARRISON. 1957. 382 p.  
 v. 7. *September 1951 to October 1953*, by B. S. KEIRSTEAD, with the assistance of Muriel ARMSTRONG. 1966. 268 p. (An Oxford in Canada paperback, OCP 9)  
 v. 8. *1953 to 1955*, by D. C. MASTERS. 1965. 223 p. (An Oxford in Canada paperback, OCP 4)  
 v. 9. *October 1955 to June 1957*, by James EAYRS. 1965. 291 p. (An Oxford in Canada paperback, OCP 5)  
 v. 10 not yet published.  
 v. 11. *1959-1961*, by R. A. PRESTON. 1965. 300 p.
- CANADIAN INSTITUTE ON PUBLIC AFFAIRS. *Diplomacy in evolution; 30th Couchiching Conference*. Ed. by D. L. B. HAMLIN. Toronto, University of Toronto Press, 1961. 128 p.
- CONANT, Melvin. *The long polar watch; Canada and the defence of North America*. New York, Harper, 1962. 204 p.
- CONGRÈS DES AFFAIRES CANADIENNES. 4e, Québec, 1964. *La dualité canadienne à l'heure des États-Unis*. Québec, Presses de l'Université Laval, 1965. 132 p. (CAC 4)
- DEENER, D. R., ed. *Canada-United States treaty relations*. Durham, N.C., Duke University Press, 1963. 250 p. (Duke University Commonwealth Studies Center publ., 19)
- EAYRS, James. *The art of the possible; government and foreign policy in Canada*. Toronto, University of Toronto Press, 1961. 232 p.
- EAYRS, James. *Northern approaches; Canada and the search for peace*. Toronto, Macmillan, 1961. 195 p.
- GLAZEBROOK, G. P. de T. *A history of Canadian external relations*. Rev. ed. Toronto, McClelland and Stewart, 1966. 2 v. (The Carleton library, no. 27-28)
- GLUEK, A. C. *Minnesota and the manifest destiny of the Canadian Northwest; a study in Canadian-American relations*. Toronto, University of Toronto Press, 1965. 311 p.
- KEENLEYSIDE, H. L., et al. *The growth of Canadian policies in external affairs*. Durham, N.C., Duke University Press, 1960. 174 p. (Duke University Commonwealth Studies Center publ., 14)
- LYON, P. V. *The policy question; a critical appraisal of Canada's role in world affairs*. Toronto, McClelland and Stewart, 1963. 128 p.
- MACDONALD, R. S., ed. *The Arctic frontier*. Toronto, University of Toronto Press, 1966. 311 p.
- MERCHANT, L. T., ed. *Neighbors taken for granted; Canada and the United States*. New York, F. A. Praeger; Toronto, Burns and MacEachern, 1966. 166 p.
- MINIFIE, J. M. *Open at the top; reflections on U.S.-Canada relations*. Toronto, McClelland and Stewart, 1964. 104 p.
- PATRY, André. *Le régime des cours d'eau internationaux*. Québec, Presses de l'Université Laval, 1960. 72 p.
- PEARSON, L. B. *The four faces of peace and the international outlook; statements selected and edited by Sherleigh G. Pierson*. Toronto, McClelland and Stewart, 1964. 267 p.
- PEARSON, L. B. *Politique mondiale et démocratie*. Paris, La Colombe, 1958. 152 p.
- PENNINGTON, Norman. *Canada and imperialism, 1896-1899*. Toronto, University of Toronto Press, 1965. 288 p.
- RIDDELL, W. A. *Documents on Canadian foreign policy, 1917-1939*. Toronto, Oxford University Press, 1962. 806 p.
- ROUSSIN, Marcel. *Le Canada et le système interaméricain*. Ottawa, Éditions de l'Université d'Ottawa, 1959. 285 p. (Les publications sériees de l'Université d'Ottawa, 59)
- SPICER, J. K. *A Samaritan state? External aid in Canada's foreign policy*. Toronto, University of Toronto Press, 1966. 272 p.

## Government and Politics

- ATTCHISON, J. H., ed. *The political process in Canada; essays in honour of R. M. Dawson*. Toronto, University of Toronto Press, 1963. 193 p.
- ANGERS, F. A. *Essai sur la centralisation; analyse de principe politique et économique dans les perspectives canadiennes*. Montréal, Beauchemin, 1960. 331 p.
- ANTON, F. R. *The role of government in the settlement of industrial disputes in Canada*. Don Mills, Ont., CCH Canadian, 1962. 262 p.
- ASHLEY, C. A., and SMAILS, R. G. H. *Canadian crown corporations; some aspects of their administration and control*. Toronto, Macmillan, 1965. 360 p.
- BÉDARD, Charles. *Le régime juridique des Grands Lacs de l'Amérique du Nord et du Saint-Laurent*. Québec, Presses de l'Université Laval, 1966. 178 p.
- BISSONNETTE, Bernard. *Essai sur la Constitution du Canada*. Montréal, Éditions du Jour, 1963. 199 p.
- BREWIN, F. A. *Stand on guard; the search for a Canadian defence policy*. Toronto, McClelland and Stewart, 1965. 140 p.
- CANADA. Département des Impressions et de la papeterie publiques. *L'Administration fédérale du Canada*. Ottawa, Imprimeur de la Reine, 1966. 371 p.
- CANADA. Department of Public Printing and Stationery. *Organization of the Government of Canada*. Ottawa, Queen's Printer, 1966. 357 p.
- CLEMENTS, M. R. *By their bootstraps; a history of the credit union movement in Saskatchewan*. Toronto, Clarke, Irwin, 1965. 270 p.
- COHEN, R. I. *Quebec votes; the how and why of Quebec voting in every federal election since Confederation*. Montreal, Saje Publications, 1965. 128 p.
- COHEN, R. I. *Le vote au Québec; les «pourquoi» et «comment» du vote fédéral au Québec depuis la Confédération*. Montréal, Saje Publications, 1965. 128 p.
- COOK, G. R. *Canada and the French-Canadian question*. Toronto, Macmillan, 1966. 219 p.
- COOK, Ramsay. *The politics of John W. Dajoe and the Free Press*. Toronto, University of Toronto Press, 1962. 305 p.
- CORBETT, D. C. *Politics and the airlines*. Toronto, University of Toronto Press, 1965. 350 p.
- CRAIG, W. G. *The law and procedure of meetings in Canada*. Toronto, Ryerson Press, 1966. 90 p.
- CRÉPEAU, P. A., and MACPHERSON, C. B., eds. *The future of Canadian federalism. L'avenir du fédéralisme canadien*. Toronto, University of Toronto Press; Montréal, Presses de l'Université de Montréal, 1965. 188 p.
- DAWSON, R. M. *Democratic government in Canada*. Rev. by W. F. DAWSON. Toronto, University of Toronto Press, 1963. 194 p. (Canadian university paperbooks, 18)
- DAWSON, R. M., ed. *The development of Dominion status, 1900-1936*. London, F. Cass, 1965. 466 p.
- DAWSON, R. M. *The government of Canada*. 4th ed. Rev. by Norman WARD. Toronto, University of Toronto Press, 1963. 610 p.
- DAWSON, W. F. *Procedure in the Canadian House of Commons*. Toronto, University of Toronto Press, 1962. 271 p. (Canadian government series, 12)
- DONNELLY, M. S. *The government of Manitoba*. Toronto, University of Toronto Press, 1963. 185 p. (Canadian government series, 14)
- FARIBAULT, Marcel, and FOWLER, R. M. *Ten to one; the Confederation wager*. Toronto, McClelland and Stewart, 1965. 150 p.
- FARIBAULT, Marcel, et FOWLER, R. M. *Dix pour un; ou, Le pari confédératif*. Montréal, Presses de l'Université de Montréal, 1965. 163 p.
- GLAZEBROOK, G. P. de T. *A history of Canadian political thought*. Toronto, McClelland and Stewart, 1966. 360 p.
- GRANT, G. P. *Lament for a nation; the defeat of Canadian nationalism*. Toronto, McClelland and Stewart, 1965. 97 p. (Canada today)
- GREASON, G. K., and KING, R. C. *Canadian democracy at work*. Rev. ed. Toronto, Macmillan, 1966. 116 p. (Canadian federal, provincial and municipal systems of government)
- GUNN, Gertrude E. *The political history of Newfoundland, 1832-1864*. Toronto, University of Toronto Press, 1966. 249 p. (Canadian studies in history and government, 7)
- GWYN, R. J. *The shape of scandal; a study of a government in crisis*. Toronto, Clarke, Irwin, 1965. 248 p.
- HAMBLETON, George. *The Parliament of Canada*. Rev. ed. Toronto, Ryerson Press, 1961. 124 p.
- HODGETTS, J. E., and CORBETT, D. C. *Canadian public administration*. Toronto, Macmillan, 1960. 575 p.
- HUTCHISON, Bruce. *Mr. Prime Minister, 1867-1964*. Toronto, Longmans, 1964. 394 p.
- KUNZ, F. A. *The modern Senate of Canada, 1925-1963; a re-appraisal*. Toronto, University of Toronto Press, 1965. 395 p. (Canadian government series, 15)



- LEDERMAN, W. R., ed. *The courts and the Canadian constitution; a selection of essays*. Toronto, McClelland and Stewart, 1964. 248 p. (Carleton library, no. 16)
- MACDONALD, Norman. *Canada, immigration and colonization, 1841-1903*. Toronto, Macmillan, 1966 381 p.
- MACEWAN, J. W. G. *Poking into politics*. Edmonton, Institute of Applied Art, 1966. 192 p.
- MCGREGOR, F. A. *The fall and rise of Mackenzie King, 1911-1919*. Toronto, Macmillan, 1962. 358 p.
- MACKAY, R. A. *The unreformed Senate of Canada*. Rev. ed. Toronto, McClelland and Stewart, 1963. 216 p. (Carleton library, no. 6)
- MACKENZIE, W. L. *The selected writings of William Lyon Mackenzie, 1824-1837*. Edited by Margaret FAIRLEY. Toronto, Oxford University Press, 1960. 383 p.
- MACKINNON, Frank. *The politics of education*. Toronto, University of Toronto Press, 1962. 187 p. (Canadian university paperbooks, 4)
- MACPHERSON, C. B. *Democracy in Alberta; Social Credit and the party system*. 2d ed. Toronto, University of Toronto Press, 1962. 258 p. (Canadian university paperbooks, 9)
- MACQUARRIE, H. N. *The Conservative Party*. Toronto, McClelland and Stewart, 1965. 166 p.
- MCWHINNEY, Edward. *Comparative federalism; states' rights and national power*. 2d ed. Toronto, University of Toronto Press, 1965. 114 p.
- MEISEL, John. *The Canadian general election of 1957*. Toronto, University of Toronto Press, 1962. 313 p. (Canadian government series, 13)
- MORIN, Rosaire. *L'immigration au Canada*. Montréal, Éditions de l'Action nationale, 1966. 172 p.
- NEVERS, Edmond de. *L'avenir du peuple canadien-français*. Nouv. éd. Montréal, Fides, 1964. 332 p. (Collection du Nénuphar, 27).
- O'HEARN, P. J. T. *Peace, order and good government; a new constitution for Canada*. Toronto, Macmillan, 1964. 325 p.
- PARÉ, Gérard, o.p. *Au-delà du séparatisme: le Canada que j'ai revu*. Montréal, Éditions du jour, 1966. 132 p. (Les Idées du jour, D-22)
- PICKERSGILL, J. W. *The Mackenzie King record, Vol. 1, 1939-44*. Toronto, University of Toronto Press, 1960. 723 p.
- QUINN, H. F. *The Union Nationale; a study in Quebec nationalism*. Toronto, University of Toronto Press, 1963. 249 p.
- REGENSTREIF, Peter. *The Diefenbaker interlude; parties and voting in Canada; an interpretation*. Toronto, Longmans, 1965. 194 p.
- ROWAT, D. C. *Your local government; a sketch of the municipal system in Canada*. Toronto, Macmillan, 1962. 148 p.
- RUSSELL, P. H., ed. *Leading constitutional decisions; cases on the British North America Act*. Toronto, McClelland and Stewart, 1965. 234 p. (Carleton library, no. 23)
- SAYWELL, J. T. *The office of Lieutenant-governor; a study in Canadian government and politics*. Toronto, University of Toronto Press, 1957. 302 p. (Canadian government series, 9)
- SCARROW, H. A. *Canada votes; a handbook of federal and provincial election data*. New Orleans, Hauser Press, 1962. 238 p.
- SCHMEISER, D. A. *Civil liberties in Canada*. London, Oxford University Press, 1964. 302 p.
- SCOTT, F. R., and OLIVER, Michael, eds. *Quebec states her case; speeches and articles from Quebec in the years of unrest*. Toronto, Macmillan, 1964. 165 p.
- SLOAN, T. S. *Quebec: the not-so-quiet revolution*. Toronto, Ryerson Press, 1965. 121 p.
- SLOAN, T. S. *Une révolution tranquille?* Traduit par Michel van SCHENDEL. Montréal, Éditions, HMM, 1965. 159 p. (Collection aujourd'hui)
- TARNOPOLSKY, W. S. *The Canadian Bill of Rights*. Toronto, Carswell. 1966. 246 p.
- THOMPSON, R. N. *Commonsense for Canadians; a selection of speeches analysing today's opportunities and problems*. Toronto, McClelland and Stewart, 1965. 162 p. (On Social Credit policies for Canada)
- THORBURN, H. G. *Party politics in Canada*. Toronto, Prentice-Hall, 1963. 172 p.
- UNDERHILL, F. H. *In search of Canadian liberalism*. Toronto, Macmillan, 1960. 282 p.
- VARCOE, F. P. *The constitution of Canada*. 2d ed. Toronto, Carswell, 1965. 314 p.
- VIAU, Roger. *Lord Durham*. Montréal, Éditions HMM, 1962. 181 p. (Figures canadiennes, 7)
- WALKER, F. A. *Catholic education and politics in Canada; a documentary study*. Toronto, Nelson, 1964. 507 p.
- WARD, Norman. *Government in Canada*. Toronto, Gage, 1960. 326 p.
- WARD, Norman. *The Public purse; a study in Canadian democracy*. Toronto, University of Toronto Press, 1962. 334 p. (Canadian government series, 11)

## History

- BARBEAU, Victor. *Regards sur Montréal*. Montréal, Académie canadienne-française, 1966. 163 p. (Académie canadienne-française. Cahiers, n° 10)
- BLANCHARD, J.-H. *The Acadians of Prince Edward Island, 1720-1964*. Charlottetown, 1964. 151 p.
- BOLGER, F. W. P. *Prince Edward Island and Confederation, 1863-1873*. Charlottetown, St. Dunstan's University Press, 1964. 308 p.
- BOND, Courtney. *City on the Ottawa; a detailed historical guide to Ottawa, the capital of Canada*. Ottawa, Queen's Printer, 1965. 146 p.
- BOND, Courtney. *Ville sur l'Ottawa; guide historique détaillé de la ville d'Ottawa, capitale du Canada*. Ottawa, Imprimeur de la Reine, 1965. 151 p.
- BROWN, R. C., and PRANG, Margaret E., eds. *Confederation to 1949*. Scarborough, Ont., Prentice-Hall, 1966. 334 p. (Canadian historical documents series, v. 3)
- CAMPBELL, Marjorie F. *A mountain and a city; the story of Hamilton*. Toronto, McClelland and Stewart, 1966. 351 p.
- CANADA. Army. *Strange battleground; the operations in Korea and their effects on the defence policy of Canada*, by H. F. WOOD. Maps by E. H. ELLWAND. Ottawa, Queen's Printer, 1966. 317 p.
- CANADA. Armée. *Singulier champ de bataille; les opérations en Corée et leurs effets sur la politique de défense du Canada*, par H. F. WOOD. Cartes par E. M. [sic] ELLWAND. Ottawa, Imprimeur de la Reine, 1966. 354 p.
- CANADA. Army. *Official history of the Canadian Army in the Second World War*. Ottawa, Queen's Printer, 1955-1960. 3 v.
- v. 1. *Six years of war; the Army in Canada, Britain and the Pacific*, by C. P. STACEY.
- v. 2. *The Canadians in Italy, 1943-1945*, by G. W. L. NICHOLSON.
- v. 3. *The victory campaign; the operations in north-west Europe, 1944-1945*, by C. P. STACEY.
- CANADA. Armée. *Histoire officielle de la participation de l'Armée canadienne à la Seconde Guerre mondiale*. Ottawa, Imprimeur de la Reine, 1957-1960. 3 v.
- v. 1. *Six années de guerre; l'Armée au Canada, en Grande-Bretagne et dans le Pacifique*, par C. P. STACEY.
- v. 2. *Les Canadiens en Italie, 1943-1945*, par G. W. L. NICHOLSON.
- v. 3. *La campagne de la victoire; les opérations dans le nord-ouest de l'Europe, 1944-1945*, par C. P. STACEY.
- CANADA. Dept. of National Defence. Naval Historical Section. *Canadian naval operations in Korean waters, 1950-1955*, by Thor THORGRIMSSON and E. C. RUSSELL. Ottawa, Queen's Printer, 1965. 167 p.
- CANADA. Ministère de la défense nationale. Section historique de la marine. *Les opérations navales du Canada dans les eaux coréennes, 1950-1955*, par Thor THORGRIMSSON et E. C. RUSSELL. Ottawa, Imprimeur de la Reine, 1965. 178 p.
- CARD, B. Y. *The Canadian Prairie Provinces from 1870-1950; a sociological introduction*. Toronto, Dent, 1960. 46 p.
- CARELESS, J. M. S. *Canada; a story of challenge*. Rev. and enl. ed. Toronto, Macmillan, 1963. 444 p.
- CLARK, Gerald. *Canada: the uneasy neighbor*. Toronto, McClelland and Stewart, 1965. 433 p.
- CLASSEN, H. G. *Thrust and counterthrust. The genesis of the Canada-United States boundary*. Don Mills, Ont., Longmans, 1965. 386 p.
- CRAIG, G. M. *Upper Canada, the formative years, 1784-1841*. Toronto, McClelland and Stewart, 1963. 315 p. (Canadian centenary series, 7)
- CREIGHTON, D. G. *The road to Confederation; the emergence of Canada, 1863-1867*. Toronto, Macmillan, 1964. 489 p.
- EASTON, Allan. *50 North; an Atlantic battleground*. Toronto, Ryerson Press, 1963. 287 p.
- EAYRS, J. G. *In defence of Canada*. v. 1. *From the Great War to the great depression*. v. 2. *Appeasement and rearmament*. Toronto, University of Toronto Press, 1964-65. 2 v. (Studies in the structure of power; decision-making in Canada, 1, 3)
- ECCLES, W. J. *Canada under Louis XIV, 1663-1701*. Toronto, McClelland and Stewart, 1964. 275 p. (Canadian centenary series, 3)
- FRÉGAULT, Guy. *Le Grand Marquis, Pierre de Rigaud de Vaudreuil et la Louisiane*. 2e éd. Montréal, Fides, 1963. 481 p. (Collection Fleur de lys)
- FRÉGAULT, Guy, TRUDEAU, Marcel, et BRUNET, Guy. *Histoire du Canada par les textes*. Éd. revue et augm. Montréal, Fides, 1963. 2 v.
- GORDON, W. L. *Le Canada à l'heure du choix*. Traduit par Hélène J. GAGNON. Montréal, Éditions HMH, 1966. 139 p. (Collection aujourd'hui)
- GORDON, W. L. *A choice for Canada: independence or colonial status*. Toronto, McClelland and Stewart, 1966. 125 p.
- GRAY, J. H. *The winter years; the depression on the Prairies*. Toronto, Macmillan, 1966. 220 p.

- GROULX, Lionel. *Histoire du Canada français*. 4e éd. Montréal, Fides, 1960-1962. 2 v. (Collection Fleur de lys)
- HARRIS, R. C. *The seigneurial system in early Canada; a geographical study*. Madison, University of Wisconsin Press; Québec, Presses de l'Université Laval, 1966. 247 p.
- HITSMAN, J. M. *The incredible War of 1812; a military history*. Toronto, University of Toronto Press, 1965. 265 p.
- HOFFMAN, B. G. *Cabot to Cartier, sources for a historical ethnography of northeastern North America, 1497-1550*. Toronto, University of Toronto Press, 1961. 287 p.
- JENKINS, Kathleen. *Montreal; island city of the St. Lawrence*. Garden City, N.Y., Doubleday, 1966. 559 p. (The Romance of Canadian cities series, 2)
- JULIEN, Claude. *Le Canada: dernière chance de l'Europe*. Paris, Grasset, 1965. 294 p.
- KERR, D. G. G., ed. *A historical atlas of Canada*. Cartography preparation by C. C. J. BOND, drawing by E. M. WALSH. 2d ed. Toronto, Nelson, 1966. 120 p.
- KERR, D. G. G., and DAVIDSON, R. I. K., eds. *Canada: a visual history*. Toronto, Nelson, 1966. 170 p. (Compliments D. G. G. Kerr's "A historical atlas of Canada")
- LANCOT, Gustave. *Le Canada et la Révolution américaine*. Montréal, Beauchemin, 1965. 330 p.
- LANCOT, Gustave. *Histoire du Canada*. Montréal, Beauchemin, 1962-1964. 3 v.
- LANCOT, Gustave. *A history of Canada*. Toronto, Clarke, Irwin, 1963-65. 3 v.
- LOWER, A. R. M. *Colony to nation; a history of Canada*. 4th ed. rev. Don Mills, Ont., Longmans, 1964. 600 p.
- MACNUTT, W. S. *The Atlantic Provinces; the emergence of colonial society 1712-1857*. Toronto, McClelland and Stewart, 1965. 305 p. (Canadian centenary series, 9)
- MACNUTT, W. S. *New Brunswick; a history, 1784-1867*. Toronto, Macmillan, 1963. 496 p.
- MANNING, Helen Taft. *The Revolt of French Canada, 1800-1835*. Toronto, Macmillan, 1962. 426 p.
- MASSEY, Vincent. *Confederation on the march; views on major Canadian issues during the sixties*. Toronto, Macmillan, 1965. 101 p.
- MATHEWS, Hazel. *The mark of honour*. Toronto, University of Toronto Press, 1965. 220 p. (Canadian studies in history and government, 6) (An account of the Loyalist Scots who moved to Canada from the U.S. following the American Revolution)
- MORTON, W. L. *The critical years; the union of British North America, 1857-1873*. Toronto, McClelland and Stewart, 1964. 322 p. (Canadian centenary series, 12)
- MORTON, W. L. *The Kingdom of Canada; a general history from earliest times*. Toronto, McClelland and Stewart, 1963. 556 p.
- MORTON, W. L., ed. *Manitoba: the birth of a province*. Altona, Man. Printed... by D. W. Friesen, 1965. 265 p. (Manitoba Record Society Publications, v. 1)
- MOWAT, F. M. *Westviking; the ancient Norse in Greenland and North America*. Toronto, McClelland and Stewart, 1965. 494 p.
- NEATBY, Hilda. *Quebec: the revolutionary age, 1760-1791*. Toronto, McClelland and Stewart, 1966. 300 p. (Canadian centenary series, 6)
- NICHOLSON, G. W. L. *Canadian Expeditionary Force, 1914-1919*. Ottawa, Queen's Printer, 1962. 621 p.
- NICHOLSON, G. W. L. *Le Corps expéditionnaire canadien, 1914-1919*. Ottawa, Imprimeur de la Reine, 1963. 671 p.
- NISH, J. C., ed. and trans. *The French régime*. Scarborough, Ont., Prentice-Hall, 1965. 176 p. (Canadian historical documents series, v. 1)
- NISH, J. C., éd. *Le régime français, 1534-1760*. Textes choisis et rédigés par Cameron NISH. Scarborough, Ont., Prentice-Hall, 1966. 190 p. (Histoire du Canada: textes et documents, v. 1)
- OLESON, T. J. *Early voyages and northern approaches, 1000-1632*. Toronto, McClelland and Stewart, 1963. 211 p. (Canadian centenary series, 1)
- OLLIVIER, Maurice. *Actes de l'Amérique du Nord Britannique et status connexes, 1867-1962*. Ottawa, Imprimeur de la Reine, 1962. 675 p.
- OLLIVIER, Maurice. *British North America Acts and selected statutes, 1867-1962*. Ottawa, Queen's Printer, 1962. 662 p.
- ORMSBY, Margaret A. *British Columbia; a history*. Toronto, Macmillan, 1958. 558 p.
- RADDALL, T. H. *Halifax, warden of the North*. Garden City, N.Y., Doubleday, 1965. 340 p. (The romance of Canadian cities series)
- REID, J. H. S., McNAUGHT, Kenneth, and CROWE, H. S. *A source-book on Canadian history; selected documents and personal papers*. Rev. ed., with index. Toronto, Longmans, 1964. 435 p.
- RICH, E. E. *Hudson's Bay Company, 1670-1870*. Toronto, McClelland and Stewart, 1960. 3 v.
- ROBINSON, P. J. *Toronto during the French régime; a history of the Toronto region from Brulé to Simcoe, 1616-1793*. 2d ed. Toronto, University of Toronto Press, 1965. 274 p.



- SCADDING, Canon Henry. *Toronto of old*. Abridged and edited by F. H. ARMSTRONG. Toronto, Oxford University Press, 1966. 396 p.
- SCHULL, Joseph. *The far distant ships; an official account of Canadian naval operations in the Second World War*. Ottawa, Queen's Printer, 1961. 527 p.
- SCHULL, Joseph. *Lointains navires; compte rendu officiel des opérations de la Marine canadienne au cours de la seconde Grande Guerre*. Ottawa, Imprimeur de la Reine, 1953. 605 p.
- SPRY, Irene M. *The Palliser Expedition*. Toronto, Macmillan, 1963. 310 p.
- STANLEY, G. F. G. *The birth of western Canada; a history of the Riel Rebellions*. Toronto, University of Toronto Press, 1963. 475 p. (Canadian university paperbooks, 10).
- STANLEY, G. F. G. *Canada's soldiers; the military history of an unmilitary people*. Rev. ed. Toronto, Macmillan, 1960. 449 p.
- STANLEY, G. F. G. *The story of Canada's flag; a historical sketch*. Toronto, Ryerson Press, 1965. 96 p.
- SWETTENHAM, J. A. *To seize the victory; the Canadian Corps in World War I*. Toronto, Ryerson Press, 1965. 265 p.
- TRUDEL, Marcel. *Atlas historique du Canada français, des origines à 1867*. Éd. remaniée. Québec, Presses de l'Université Laval, 1961. 93 p.
- TRUDEL, Marcel. *L'esclavage au Canada français*. Québec, Presses de l'Université Laval, 1960. 432 p.
- TRUDEL, Marcel. *Histoire de la Nouvelle-France*. v. 1, 1524-1603. v. 2, 1604-1627. Montréal, Fides, 1963-1966. 2 v.
- UNIVERSITY LEAGUE FOR SOCIAL REFORM. *Nationalism in Canada*. Edited by Peter RUSSELL. Toronto, McGraw-Hill, 1966. 377 p.
- UNIVERSITY LEAGUE FOR SOCIAL REFORM. *The prospects of change; proposals for Canada's future*. Edited by Abraham ROTSTEIN. Toronto, McGraw-Hill, 1965. 361 p.
- WAITE, P. B. *The life and times of Confederation, 1864-1867*. Toronto, University of Toronto Press, 1962. 379 p.
- WAITE, P. B., ed. *Pre-Confederation*. Scarborough, Ont., Prentice-Hall, 1965. 242 p. (Canadian historical documents series, v. 2)
- WALKER, F. N. *Sketches of old Toronto*. Don Mills, Ont., Longmans, 1965. 350 p.
- WALLOT, J.-P. *Intrigues françaises et américaines au Canada, 1800-1802*. Montréal, Éditions Leméac, 1965. 142 p.
- WHITELAW, W. M. *The Maritimes and Canada before Confederation*. Toronto, Oxford University Press, 1966. 347 p. (An Oxford in Canada paperback, OCP 8)
- WORTHINGTON, Clara E. *Amid the guns below; the story of the Canadian Corps, 1914-1919*. Toronto, McClelland and Stewart, 1965. 171 p.
- ZASLOW, Morris, and TURNER, W. B., eds. *The defended border: Upper Canada and the War of 1812; a collection of writings giving a comprehensive picture of the War of 1812 in Upper Canada*. Edited for the Ontario Historical Society. Toronto, Macmillan, 1964. 370 p.

### Literature and the Arts

- ANGUS, Margaret. *The old stones of Kingston; its buildings before 1867*. Photos by G. E. O. LILLEY. Toronto, University of Toronto Press, 1966. 120 p.
- ARTHUR, E. R. *Toronto, no mean city*. Toronto, University of Toronto Press, 1964. 280 p.
- BARBEAU, Marius. *Folk songs of old Quebec*. Song translations by Regina L. SHOOLMAN. 2d ed. Ottawa, Queen's Printer, 1964. 72 p. (National Museum of Canada bulletin 75)
- BARBEAU, Marius. *Le rossignol y chante; première partie du répertoire de la chanson folklorique française au Canada*. Ottawa, Imprimeur de la Reine, 1962. 485 p. (Musée national du Canada bulletin 175)
- BÉRAUD, Jean. *350 ans de théâtre au Canada français*. Montréal, Cercle du Livre de France, 1958. 316 p. (Encyclopédie du Canada français, v. 1)
- BISSELL, C. T., comp. *Great Canadian writing; a century of imagination*. Toronto, Canadian Centennial Pub. Co., 1966. 127 p. (The Canadian centennial library)
- CANADA. National Gallery. *Catalogue of paintings and sculpture*. Vol. III: Canadian school. Toronto, University of Toronto Press, 1960. 463 p.
- CANADIAN BROADCASTING CORPORATION. International Service. *Thirty-four biographies of Canadian composers*. *Trente-quatre biographies de compositeurs canadiens*. Montreal, 1964. 110 p. (Text bilingual)
- CANADIAN MUSIC CENTRE. *Catalogue of orchestral music at the Canadian Music Centre, including orchestra, band, concertos, operas and vocal-orchestral*. *Catalogue des oeuvres disponibles au Centre musical canadien, orchestre, fanfare et harmonie, opéra, voix et orchestre*. Toronto, 1968. 22, 120 p.

- La Chanson française par Jacques Charpentreau et autres.* Montréal, Éditions Bellarmin, 1965. 136 p. (Collection "Collège et famille", n° 1)
- COLLET, Paulette. *L'Hiver dans le roman canadien-français.* Québec, Presses de l'Université Laval, 1965. 281 p. (Vie des lettres canadiennes, 3)
- CREIGHTON, Helen. *Maritime folk songs.* Musical transcriptions and chord symbols by Kenneth PEACOCK. Toronto, Ryerson Press, 1962. 214 p.
- DUVAL, Paul. *Group of Seven drawings.* Toronto, Burns and MacEachern, 1965. 1 v. (chiefly illus.)
- FOWKE, Edith, and MILLS, Alan. *Canada's story in song.* Rev. ed. Piano accompaniments by Helmut BLUME. Guitar accompaniments by Bran MORRISON. Toronto, W. J. Gage, 1965. 230 p. (Songs accompanied by explanatory text)
- FOWKE, Edith, ed. *Traditional singers and songs from Ontario.* Toronto, Burns and MacEachern, 1965. 210 p. (Traditional singers and songs, v. 1)
- THE GALLERY OF CANADIAN ART. Toronto, McClelland and Stewart, 1962-65.
1. *Cornelius Krieghoff*, by Marius BARBEAU. 15 p., 30 p. of illus.
  2. *Tom Thomson*, by R. H. HUBBARD. 16 p., 30 p. of illus.
  3. *David Milne*, by Alan JARVIS. 16 p., 30 p. of illus.
  4. *Alfred Pellin*, by D. W. Buchanan. 15 p., 30 p. of illus.
  5. *On the enjoyment of modern art; an explanatory text.* Illus. by Canadian paintings. 72 p.
- GOWANS, A. W. *Building Canada; an architectural history of Canadian life.* Rev. and enl. ed. Toronto, Oxford University Press, 1966. 412 p. (First ed. 1958, under title *Looking at architecture in Canada*)
- GRANDMOND, Eloi de, HUDON, Normand, et ROUX, J. L. *Dix ans de théâtre au Nouveau Monde; histoire d'une compagnie théâtrale canadienne.* Montréal, Éditions Leméac, 1961. 1 v. (non paginé)
- GRANDPRE, Pierre de. *Dix ans de vie littéraire au Canada français.* Montréal, Beauchemin, 1966. 293 p.
- Great Canadian painting; a century of art.* Toronto, Canadian Centennial Pub. Co., 1966. 127 p. (The Canadian centennial library)
- GREENHILL, R. A. *Early photography in Canada.* Toronto, Oxford University Press, 1965. 173 p.
- HAMELIN, Jean. *Le renouveau du théâtre au Canada français.* Montréal, Éditions du Jour, 1962. 160 p.
- HARPER, J. R. *Painting in Canada; a history.* Toronto, University of Toronto Press, 1966. 443 p.
- HARPER, J. R. *La peinture au Canada des origines à nos jours.* Québec, Presses de l'Université Laval, 1966. 442 p.
- HEINRICH, T. A., ed. *Art treasures in the Royal Ontario Museum.* Toronto, McClelland and Stewart, 1963. 200 p.
- HUBBARD, R. H., ed. *An anthology of Canadian art.* Toronto, Oxford University Press, 1960. 187 p.
- HUBBARD, R. H. *The development of Canadian art.* Ottawa, Queen's Printer, 1963. 137 p.
- HUBBARD, R. H. *L'évolution de l'art au Canada.* Ottawa, Imprimeur de la Reine, 1963. 137 p.
- JOHNSON, E. Pauline. *Pauline Johnson: her life and work; her biography written by, and her prose and poems selected by Marcus VAN STEEN.* Toronto, Musson, 1965. 279 p.
- KALLMAN, Helmut. *A history of music in Canada 1534-1914.* Toronto, University of Toronto Press, 1960. 311 p.
- KLINCK, C. F., and WATTERS, R. E., eds. *Canadian anthology.* Rev. ed. Toronto, Gage, 1966. 626 p. (Selected poetry and prose from English-Canadian literature)
- KLINCK, C. F. et al., eds. *Literary history of Canada; Canadian literature in English.* Toronto, University of Toronto Press, 1965. 945 p.
- LAYTON, Irving. *Collected poems.* Toronto, McClelland and Stewart, 1965. 353 p.
- MACKENZIE, W. R., comp. *Ballads and sea songs from Nova Scotia.* Hatboro, Pa., Folklore Associates, 1963. 421 p.
- MACRAE, Marion, and ADAMSON, Anthony. *The ancestral roof; domestic architecture of Upper Canada.* Toronto, Clarke, Irwin, 1963. 258 p.
- MILNE, W. S., comp. *Canadian full-length plays in English; a preliminary annotated catalogue.* Ottawa, Dominion Drama Festival, 1964. 47 p.
- MILNE, W. S., comp. *Canadian full-length plays in English, II.* Ottawa, Dominion Drama Festival, 1966. 39 p. (A supplement to the preliminary annotated catalogue)
- MONTRÉAL. Musée des beaux-arts. *Le Musée des beaux-arts de Montréal; peinture, sculpture, arts décoratifs.* Montréal, 1960. 192 p.
- MONTRÉAL. Museum of Fine Arts. *The Montreal Museum of Fine Arts; painting, sculpture, decorative arts.* Montreal, 1960. 192 p.
- MONTRÉAL. Musée des beaux-arts. *Paul Emile Borduas, 1905-1960.* Montréal, 1962. 57 p.

- MORISSET, Gérard. *La peinture traditionnelle au Canada français*. Montréal. Cercle du Livre de France, 1960. 216 p. (Encyclopédie du Canada français, v. 2)
- MORRIS, Peter, and KARDISH, Larry, comps. and eds. *Canadian feature films, 1914-1964*. Ottawa, Canadian Film Institute, 1965. 57 p. (Canadian Film Archives. Canadian filmography series, no. 1)
- MORRIS, Peter, ed. *The National Film Board of Canada: the war years; a collection of contemporary articles and a selected index of productions*. Ottawa, Canadian Film Institute, 1965. 32 p. (Canadian Film Archives. Canadian filmography series, no. 3)
- PACEY, Desmond. *Creative writing in Canada; a short history of English Canadian literature*. 2d ed. Toronto, Ryerson Press, 1961. 314 p.
- PALARDY, Jean. *The early furniture of French Canada*. 2d ed. Toronto, Macmillan, 1965. 413 p.
- PALARDY, Jean. *Les meubles anciens du Canada français*. 2e éd. rev. et augm. Paris, Arts et métiers graphiques, 1965. 411 p.
- PARADIS, Suzanne. *Femme fictive, femme réelle; le personnage féminin dans le roman féminin canadien-français, 1884-1966*. Québec, Garneau, 1966. 330 p.
- PEACOCK, Kenneth. *Songs of the Newfoundland outports*. Ottawa, Queen's Printer, 1965. 3 v. (National Museum of Canada bulletin no. 197)
- RECHERCHES SOCIOGRAPHIQUES. *Colloque*. 2e, Québec, 1964. Littérature et société canadiennes-françaises; ouvrage réalisé sous la direction de Fernand DUMONT et J.-C. FALARDEAU. Québec, Presses de l'Université Laval, 1964. 272 p.
- RICHARDS, Stanley, ed. *Canada on stage; a collection of one-act plays*. Edited and introduced by Stanley RICHARDS. Toronto, Clarke, Irwin, 1960. 324 p.
- ROBERT, Guy. *École de Montréal; situation et tendances—situation and trends*. Traduction anglaise de George LACH. Montréal, Éditions du Centre de psychologie et de pédagogie, 1964. 150 p. (Collection Artistes canadiens, 3)
- ROBERT, Guy. *Littérature du Québec*. T. 1. *Témoignages de 17 poètes*. Montréal, Librairie Déom, 1964. 333 p. (Doit comprendre 8 tomes)
- ROBERT, Guy. *Pellan; sa vie et son oeuvre—his life and his art*. Montréal, Éditions du Centre de psychologie et de pédagogie, 1963. 135 p. (Collection Artistes canadiens)
- ROBIDOUX, Réjean, o.m.i., et RENAUD, André. *Le roman canadien-français du vingtième siècle*. Ottawa, Éditions de l'Université d'Ottawa, 1966. 221 p. (Visage des lettres canadiennes)
- Le roman canadien-français: évolution, témoignages, bibliographie*. Montréal, Fides, 1964. 458 p. (Archives des lettres canadiennes, t. 3)
- ROME, David. *Jews in Canadian literature; a bibliography*. Montreal, Canadian Jewish Congress and Jewish Public Library, 1962. 259 p.
- ROSS, Malcolm, ed. *Poets of the Confederation*. Toronto, McClelland and Stewart, 1960. 130 p. (A New Canadian library original, 91)
- SMITH, A. J. M. *The book of Canadian prose*. v. 1. *Early beginnings to Confederation*. Toronto, Gage, 1965.
- SMITH, A. J. M. *The Oxford book of Canadian verse in English and French, 1960*. Toronto, Oxford University Press, 1965. 445 p. (An Oxford in Canada paperback, 1)
- SPENCE, Hilda, and SPENCE, Kevin. *A guide to early Canadian glass*. Don Mills, Ont., Longmans, 1966. 112 p.
- STRATFORD SHAKESPEAREAN FESTIVAL FOUNDATION OF CANADA. *The Stratford Festival story, 1953-1966*. Stratford, Ont., 1966. 29 p.
- SWINTON, George. *Eskimo sculpture. Sculpture esquimaude*. Toronto, McClelland and Stewart, 1965. 224 p. (Text bilingual)
- SYLVESTRE, Guy. *Anthologie de la poésie canadienne-française*. 4e éd. Montréal, Beauchemin, 1964. 376 p.
- THERIO, Adrien. *Conteurs canadiens-français; époque contemporaine*. Montréal, Librairie Déom, 1965. 322 p. (Anthologie formée de récits de vingt-trois auteurs)
- TOUGAS, Gérard. *Histoire de la littérature canadienne-française*. 3e éd. Paris, Presses universitaires de France, 1966. 312 p.
- TOUGAS, Gérard. *History of French-Canadian literature*. Translation by Alta L. Cook. 2d ed. Toronto, Ryerson Press, 1966. 301 p.
- WATTERS, R. E., ed. *British Columbia*. 2d ed. Toronto, McClelland and Stewart, 1961. 576 p. (An anthology)
- WEAVER, R. L., ed. *Canadian short stories*. Toronto, Oxford University Press, 1966. 420 p. (An Oxford in Canada paperback, 7)
- WEIR, E. A. *The struggle for national broadcasting in Canada*. Toronto, McClelland and Stewart, 1965. 477 p.
- WILSON, M. T., ed. *Poetry of midcentury, 1940-1960*. Toronto, McClelland and Stewart, 1964. 237 p. (New Canadian library original, no. 04. Poets of Canada, v. 3)



- WILSON, R. D. *Le passé vivant de Montréal. The living past of Montreal.* (Texte de Eric McLEAN. Version française de Paul ROUSSEL.) Montréal, McGill University Press, 1964. 11 p., 10 pl.
- WYCZYNSKI, Paul. *François-Xavier Garneau; aspects littéraires de son oeuvre.* Ottawa, Éditions de l'Université d'Ottawa, 1966. 207 p. (Visage des lettres canadiennes)

### General Reference Works

- ANGER, W. H., and ANGER, H. D. *A digest of Canadian law.* 18th ed. by F. R. HUME. Toronto, Canada Law Book Co., 1961. 538 p.
- The Atlantic year book.* Fredericton, N.B. Published for the Atlantic Advocate by Brunswick Press. Annual.
- BOULT, Reynald, comp. *Bibliographie du droit canadien.* Montréal, Wilson et Lafleur, 1966. 393 p.
- BOULT, Reynald, comp. *A bibliography of Canadian law.* Montreal, Wilson and Lafleur, 1966. 393 p.
- CANADA. Department of Public Printing and Stationery. *Canadian government publications catalogue.* Ottawa, Queen's Printer. Annual.
- CANADA. Département des impressions et de la papeterie publiques. *Publications du gouvernement canadien; catalogue.* Ottawa, Imprimeur de la Reine. Annuel.
- CANADA. Dominion Bureau of Statistics. *Canada one hundred 1867-1967.* Ottawa, Queen's Printer, 1967. 512 p. (A Centennial volume published in lieu of "Canada 1967; official handbook of present conditions and recent progress")
- CANADA. Bureau fédéral de la statistique. *Canada un siècle 1867-1967.* Ottawa, Imprimeur de la Reine, 1967. 512 p. (Édition spéciale pour le Centenaire, qui remplace «Canada 1967; revue officielle de la situation actuelle et des progrès récents.»)
- CANADA. Dominion Bureau of Statistics. *Canada year book, 1966.* Ottawa, Queen's Printer, 1966. 1192 p.
- CANADA. Bureau fédéral de la statistique. *Annuaire du Canada, 1966.* Ottawa, Imprimeur de la Reine, 1966. 1302 p.
- CANADA. Dominion Bureau of Statistics. *Daily bulletin.* Ottawa, Queen's Printer.
- CANADA. Bureau fédéral de la statistique. *Le bulletin quotidien.* Ottawa, Imprimeur de la Reine.
- CANADA. Dominion Bureau of Statistics. *Canadian statistical review.* Ottawa, Queen's Printer. Monthly, with weekly and bilingual annual supplements.
- CANADA. Bureau fédéral de la statistique. *Revue statistique du Canada.* Ottawa, Imprimeur de la Reine. Mensuel avec suppléments hebdomadaires.
- CANADA. Dominion Bureau of Statistics. *Publications of the Dominion Bureau of Statistics, 1964. Bureau fédéral de la statistique, publications.* Ottawa, Queen's Printer, 1965. 325 p.
- CANADA. Dominion Bureau of Statistics. *National accounts, income and expenditure.* Ottawa, Queen's Printer. Quarterly and annual.
- CANADA. Department of Mines and Technical Surveys. *Atlas of Canada.* Ottawa, Queen's Printer, 1957. 7 p., 110 double-sheet maps.
- CANADA. Ministère des Mines et des Relevés techniques. *Atlas du Canada.* Ottawa, Imprimeur de la Reine, 1958. 450 cartes, 110 feuilles.
- CANADA. National Film Board. *Canadian picture index.* Ottawa, Queen's Printer, 1963-65. 2 v. Looseleaf in binder. (v. 1 English only; v. 2 bilingual)
- CANADA. Office national du film. *Répertoire des photos du Canada.* Ottawa, Imprimeur de la Reine, 1963-1965. 2 v. Feuilles volantes dans un relieur de toile. (v. 1 en anglais seulement; v. 2 bilingue)
- CANADA. National Library. *Canadiana; publications of Canadian interest noted by the National Library.* Ottawa, Queen's Printer. Monthly, with annual cumulation.
- CANADA. Bibliothèque nationale. *Canadiana; publications se rapportant au Canada notées par la Bibliothèque nationale.* Ottawa, Imprimeur de la Reine. Mensuel, avec refonte annuelle.
- CANADA. National Library. *Canadiana, 1950-1962, index.* Ottawa, Queen's Printer, 1965. 2 v.
- CANADA. Bibliothèque nationale. *Canadiana, 1950-1962, index.* Ottawa, Imprimeur de la Reine, 1965. 2 v.
- Canada careers directory for university graduates. Choisissez votre carrière, pour diplômés universitaires.* Montreal, Cormmarket Press. Bilingual. Bilingue. Annual. Annuel.
- Canada legal directory, for the legal profession, containing the names of the judges, lawyers, court officials, etc., throughout Canada.* Toronto, Canada Legal Directory (125 Lowther Ave.) Annual.
- Canadian almanac and directory.* Toronto, Copp Clark. Annual.
- Canadian annual review.* Toronto, University of Toronto Press. (Includes some text in French)
- CANADIAN CULTURAL INFORMATION CENTRE. *Some Canadian cultural organizations. Certaines organisations culturelles canadiennes.* Ottawa, 1965. 72 p. (Text bilingual)

- The Canadian dictionary; French-English, English-French.* Concise ed. Toronto, McClelland and Stewart, 1962. 861 p.
- Dictionnaire canadien; français-anglais, anglais-français.* Éd. abrégée. Toronto, McClelland and Stewart, 1962. 861 p.
- Canadian hospital directory.* Toronto, Canadian Hospital Association. Annual.
- Canadian medical directory.* Toronto, Seccombe House. Annual.
- Canadian periodical index; an author and subject index.* Jan. 1938-Dec. 1947. Ottawa, Canadian Library Association, Association canadienne des bibliothèques, 1966. V. 1, A-D; V. 2, E-N. To be completed in 3 vols. (Cumulates and supersedes the annual cumulations compiled by the Circulation Dept. of the University of Toronto Library.)
- Canadian periodical index. Index de périodiques canadiens.* Ottawa, Canadian Library Association, Association canadienne des bibliothèques. Monthly. Mensuel.
- Catalogue de l'édition au Canada français, 1966-67.* Montréal, Conseil supérieur du livre, 1966. 358 p.
- Encyclopedia Canadiana.* Centennial ed. Toronto, Grolier of Canada, 1966. 10 v.
- Index to Canadian legal periodical literature, 1963-65.* Montreal, Canadian Association of Law Libraries, 1966. 316 p.
- Library directory. Répertoire des bibliothèques canadiennes.* Part II of January issue of Canadian Library. Canadian Library Association. Association canadienne des bibliothèques. Ottawa. Annual. Annual.
- Livres et auteurs canadiens; panorama de la production littéraire.* Montréal, Éditions Jumonville. Annual.
- McGILL UNIVERSITY, Montreal. Library. *The Lawrence Lande Collection of Canadiana; a bibliography.* Collected, arranged and annotated by LAWRENCE LANDE. Montreal, Lawrence Lande Foundation for Canadian Historical Research, 1965. 301 p.
- PEEL, Bruce, comp. *A bibliography of the Prairie Provinces to 1953.* Toronto, University of Toronto Press, 1956. 680 p. Supplement. Toronto, University of Toronto Press, 1963. 130 p.
- PRIESTLEY, F. E. L. *The humanities in Canada; a report prepared for the Humanities Research Council of Canada.* Toronto, University of Toronto Press, 1964. 246 p. (Bibliography of scholarly publications, p. 98-246)
- ROY, G. R., and GNAROWSKI, Michael, comps. *Canadian poetry; a supplementary bibliography.* Quebec, Culture, 1964. 13 p. (Intended as a supplement to existing bibliographies, notably to *A check list of Canadian literature and background material, 1628-1950*, by R. E. WATTERS)
- Slavica Canadiana.* 1965. Winnipeg, Canadian Association of Slavists, 1966. 64 p. (Slavistica, 57)
- TANGHE, Raymond. *Bibliography of Canadian bibliographies.* Toronto, University of Toronto Press, 1960. 206 p. With biennial supplements.
- TANGHE, Raymond. *Bibliographie des bibliographies canadiennes.* Toronto, University of Toronto Press, 1960. 206 p. Avec suppléments biennaux.
- URQUHART, M. C., and BUCKLEY, K. A. H. *Historical statistics of Canada.* Cambridge, Eng., University Press; Toronto, Macmillan, 1965. 672 p.
- WATTERS, R. E., comp. *A check list of Canadian literature and background material, 1628-1950.* Toronto, University of Toronto Press, 1960. 789 p.
- WATTERS, R. E., and BELL, I. F., comps. *On Canadian literature, 1806-1960; a check list of articles, books and theses on English-Canadian literature, its authors, and language.* Toronto, University of Toronto Press, 1966. 165 p.

## Section 2.—Federal Government Information Services

The chief source of statistical information on all phases of the economy of Canada is the Dominion Bureau of Statistics where the ten-year and five-year censuses of Canada are planned and statistical information of all kinds—federal and provincial—is centralized. Certain areas of effort, such as trade and commerce, customs and excise, currency and banking, navigation, transportation, radio, population and national defence are constitutionally federal affairs and on such subjects the respective departments at Ottawa are the proper sources of information with which to communicate. Other fields of effort such as the administration of lands and natural resources, education, roads and highways, and health and hospitals are the responsibility of the provinces and data may be obtained concerning the individual provincial efforts in these fields from the respective provincial government departments. However, certain federal departments are also concerned with specific aspects of these subjects and, as in the case of the Dominion Bureau of Statistics, in the co-ordination and presentation of the material for Canada as a whole. The Government of Canada, while not administering the resources within the provincial boundaries,



co-operates closely with the provinces and is in a position to furnish material for Canada, especially production data on a national basis, marketing data on international, national and provincial bases, research work and experimental station data on a national basis, and also on a provincial basis from Federal Government stations located within particular provinces. In agriculture, for instance, data on the breeding of livestock and the improvement of strains, on agricultural marketing and on crop yields are cases in point; in forestry, questions on forest research, forest fire protection and reforestation offer good examples.

Certain Federal Government bodies and national agencies, because of the nature of their work and the appeal it has to broad sections of the population, are organized primarily as information or publicity agencies. Among these are: the Information Division, Department of External Affairs, which deals with questions about external affairs originating in Canada and with general requests originating abroad for information on Canada and Canadian affairs; the Trade Publicity Branch, Department of Trade and Commerce; the Information Services Division, Department of National Health and Welfare; the Canadian Broadcasting Corporation; and the National Film Board. The Departments of Agriculture, Fisheries, Forestry, Indian Affairs and Northern Development, and Energy, Mines and Resources, and such agencies as the National Gallery of Canada, the National Museum of Canada, the National Library, and the National Research Council, while not thus classed, are interested in the dissemination of information to a greater extent than most of the remaining government departments, although several of the latter have publicity branches.

Thus, inquiries for information of a statistical nature should be forwarded to the Information Division, Dominion Bureau of Statistics, Ottawa. Inquiries to federal sources for information not of a statistical nature should be sent as a general rule to the individual departments and agencies of government which are listed, with their functions, at pp. 130-150 of this publication. Inquiries relating to provincial efforts may be directed to the provincial government department concerned. Inquiries about the Yukon and Northwest Territories should be addressed to the Northern Administration Branch, Department of Indian Affairs and Northern Development, Ottawa.

### Section 3.—Sale of Official Publications

Under the provisions of the Public Printing and Stationery Act, the Queen's Printer, Ottawa, has charge of the sale of all official publications of Parliament and the Government of Canada that are issued to the public, as well as of the free distribution of all public documents and papers to persons and institutions (libraries) entitled by statutory provisions to receive them. The regulations relating to the distribution and sale of government publications made in accordance with the provisions of Sect. 7 of the Public Printing and Stationery Act and Sect. 7(e) of the Financial Administration Act were brought up to date and approved by Treasury Board on Mar. 31, 1955.

In compliance with these regulations, the Queen's Printer issues the *Daily Checklist of Government Publications* which records for the information of the public service, libraries, etc., all Federal Government publications immediately upon release. Those authorized by law or regulation to receive free copies of government publications receive the *Daily Checklist* without charge; others desiring the service may purchase an annual subscription to be forwarded daily or in weekly batches as requested.

The Queen's Printer also issues the *Monthly Catalogue of Canadian Government Publications*, a comprehensive listing of all official publications, public documents and papers not of a confidential nature published at government expense, an *Annual Catalogue* (in January) listing all publications issued during the previous year, as well as sectional catalogues and selected titles bulletins advertising new government publications.

The Queen's Printer is the national sales agent in Canada for publications issued by the United Nations; the United Nations Educational, Scientific and Cultural Organization; the World Health Organization; the Food and Agriculture Organization; the Organization for Economic Co-operation and Development; the International Atomic Energy Agency;



the International Civil Aviation Organization; the Council of Europe; the Commonwealth Economic Committee; the Organization of American States (Pan American Union); the General Agreement on Tariffs and Trade; the New Zealand Government; the International Labour Organization; the World Meteorological Organization; and the International Telecommunication Union.

Canadian Government and international organizations publications may be obtained from Queen's Printer bookstores located in Ottawa, Toronto, Montreal, Winnipeg and Vancouver (see imprint on the reverse side of the title page), or by mail from the Queen's Printer, Ottawa.

**Dominion Bureau of Statistics Publications.**—The Dominion Bureau of Statistics acts as the agent of the Queen's Printer with respect to the sale of DBS publications. Reports of the Bureau cover all aspects of the national economy; the *Canada Year Book* and Official Handbook *Canada* constitute authoritative compendiums of information on the institutions and economic and social development of Canada.

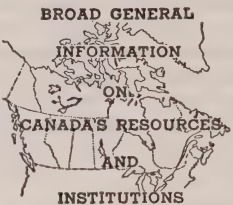
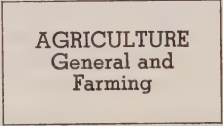
DBS publications are listed with their prices in the Queen's Printer's Catalogues of *Canadian Government Publications*. The *DBS Daily Bulletin* and *Weekly Bulletin*, prepared by the Information Division, are designed to serve persons wishing to keep closely informed on the full range of published information issued by the Bureau; the annual subscription price of each is \$1. Subscription orders for DBS publications or orders for single copies should be addressed to the Publications Distribution Unit, Dominion Bureau of Statistics, Ottawa, and should contain the necessary remittance in the form of a cheque or money order made payable to the Receiver General of Canada.

**Provincial Government Publications.**—Most provincial government publications may be obtained from the Queen's Printer of the province concerned. Inquiries should be addressed to the provincial capital cities:—

Newfoundland.....	St. John's	Ontario.....	Toronto
Prince Edward Island.....	Charlottetown	Manitoba.....	Winnipeg
Nova Scotia.....	Halifax	Saskatchewan.....	Regina
New Brunswick.....	Fredericton	Alberta.....	Edmonton
Quebec.....	Quebec	British Columbia.....	Victoria

# DIRECTORY OF SOURCES OF OFFICIAL INFORMATION

NOTE.—In the "Federal Data" column, the major source of information on each subject is given first; other sources follow in alphabetical order, with the exception of the National Film Board and the Dominion Bureau of Statistics which appear at the end of each listing with which they are concerned, except where they are the major source.

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Agriculture Information Division Dept. of Defence Production Information Division Dept. of Energy, Mines and Resources Public Relations and Information Services Dept. of Finance Information Service Dept. of Fisheries Information and Consumer Service Dept. of Forestry and Rural Development Information and Technical Services Division Dept. of Indian Affairs and Northern Development Information Services Division Dept. of Industry Information Division Dept. of Manpower and Immigration Information Service Dept. of National Health and Welfare Information Services Dept. of National Revenue Taxation Division, Information Service Dept. of Trade and Commerce Trade Publicity Branch National Library Queen's Printer ( <i>Canada Gazette</i> , <i>Statutes of Canada</i> , etc.) National Film Board (films, filmstrips, photographs on all subjects) Dominion Bureau of Statistics		<p>For broad general information in regard to particular provinces, application should be made to: Nfld., Dept. of Provincial Affairs; P.E.I., Tourist and Information Bureau; N.S., Dept. of Provincial Secretary; N.B., Dept. of Natural Resources, Travel Bureau; Que., Dept. of Industry and Commerce, Bureau of Statistics, or Dept. of Tourism, Game and Fish; Ont., Dept. of Economics and Development, or Dept. of Tourism and Information; Man., Dept. of Industry and Commerce or Dept. of Provincial Secretary; Sask., Dept. of Industry and Information or Executive Council; Alta., Government Publicity Bureau; B.C., Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics.</p>
Dept. of Agriculture Information Division Canadian Wheat Board Central Mortgage and Housing Corporation (mortgage loans for farm houses) Dept. of Finance (farm improvement loans) Dept. of Forestry and Rural Development Information and Technical Services Division (information on Agricultural and Rural Development Administration) Dept. of Industry Machinery and Heavy Equipment Branch Dept. of Manpower and Immigration Dept. of Trade and Commerce Agriculture and Fisheries Branch Dept. of Veterans Affairs (veterans farm loans) Farm Credit Corporation (mortgage loans; Farm Machinery Syndicates Credit Act loans) National Research Council Prairie Regional Laboratory, Saskatoon, Sask. (utilization of crops and crop products) Queen's Printer (agent for FAO publications) National Film Board Dominion Bureau of Statistics		<p>Nfld.:—Dept. of Mines, Agriculture, and Resources            P.E.I., N.S., N.B., Sask., Alta., B.C.:—Depts. of Agriculture            Que.:—Dept. of Agriculture and Colonization, Information and Research Branch            Dept. of Industry and Commerce, Bureau of Statistics            Ont.:—Dept. of Agriculture and Food, Farm Economics and Statistics Branch and Information Branch            Man.:—Dept. of Agriculture and Conservation</p>

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of Indian Affairs and Northern Development  
Information Services Division  
Dept. of Energy, Mines and Resources  
Polar Continental Shelf Project  
Observatories Branch  
Geological Survey of Canada  
Surveys and Mapping Branch  
Geographical Branch  
Marine Sciences Branch  
Dept. of National Defence  
Information Service  
Defence Research Board  
Dept. of National Health and Welfare  
Dept. of Public Works  
Operations Directorate  
Planning Directorate  
Dept. of Transport (airports, weather stations, navigation, supply)  
Information Services  
Fisheries Research Board of Canada  
National Research Council  
Division of Building Research (permafrost, buildings in the North, snow and ice)  
National Film Board

ARCTIC

National Arts Centre  
National Gallery of Canada (collections, exhibitions of works of art)  
Canada Council  
Dept. of Indian Affairs and Northern Development  
Northern Administration Branch (Eskimo arts—visual only)  
Dept. of Secretary of State  
National Library (books)  
Queen's Printer (National Gallery exhibition catalogues, reproductions of paintings, coloured slides, etc.)

ARTS—  
PERFORMING  
AND  
VISUAL

Nfld.:—Dept. of Provincial Affairs  
P.E.I.:—Dept. of Education  
N.S.:—Dept. of Provincial Secretary  
N.B.:—Dept. of Provincial Secretary, Travel Bureau  
Que.:—Dept. of Cultural Affairs  
Ont.:—Province of Ontario Council for the Arts  
Man.:—Manitoba Arts Council  
Sask.:—Saskatchewan Arts Board (Education)  
Alta.:—Dept. of Provincial Secretary, Cultural Development Branch  
B.C.:—Dept. of Education, Community Programmes Branch

Atomic Energy of Canada Limited (research studies, sale of radioisotopes)  
Atomic Energy Control Board (policy, regulations)  
Dept. of Energy, Mines and Resources  
Geological Survey of Canada  
Mines Branch  
Eldorado Mining and Refining Limited  
Queen's Printer (agent for International Atomic Energy Agency publications)

ATOMIC  
ENERGY

N.S.:—Dept. of Trade and Industry  
Ont.:—Dept. of Energy and Resources Management  
The Hydro-Electric Power Commission of Ontario  
Man.:—Dept. of Industry and Commerce, Manitoba Development Authority, Manitoba Research Council  
University of Manitoba, Physics Dept.  
Sask.:—University of Saskatchewan  
Alta.:—Alberta Research Council  
B.C.:—University of British Columbia

Dept. of Transport  
Civil Aviation Branch (control; licensing; airports and air navigation facilities)  
Information Services  
Air Canada  
Dept. of Defence Production  
Aerospace Branch  
Dept. of Energy, Mines and Resources  
Legal Surveys and Aeronautical Charts Division  
Dept. of Industry  
Aerospace Branch

AVIATION

Que.:—Quebec Government Air Services  
Ont.:—Dept. of Lands and Forests, Forest Protection Branch



Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of National Defence Information Service Dept. of National Health and Welfare Civil Aviation Medicine Division Dept. of Trade and Commerce Industrial Materials Branch National Research Council National Aeronautical Establishment Queen's Printer (agent for International Civil Aviation Organization publications) National Film Board Dominion Bureau of Statistics	<div>AVIATION—concl.</div>	Man.:—Manitoba Government Air Services Dept. of Industry and Commerce Sask.:—Dept. of Industry and Information, Transportation Branch
Bank of Canada Industrial Development Bank Central Mortgage and Housing Corporation Dept. of Finance (for banking; also small business loans) Dept. of Insurance (for trust and loan business; also administers the Small Loans Act) Post Office Department, Savings Bank Dominion Bureau of Statistics	<div>BANKING Trust and Loan Companies Foreign Exchange</div>	Nfld.:—Dept. of Finance Dept. of Provincial Affairs P.E.I., N.S.:—Dept. of Provincial Secretary N.B.:—Dept. of Finance Dept. of Provincial Secretary Que.:—Dept. of Finance, Insurance Branch Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Province of Ontario Savings Office Ontario Development Corporation Dept. of Insurance Man.:—Dept. of Provincial Secretary Manitoba Development Fund Manitoba Agricultural Credit Corporation Treasury Dept., Superintendent of Insurance Sask.:—Provincial Secretary, Registrar of Securities Dept. of Co-operation and Co-operative Development Alta.:—Treasury Dept., Superintendent of Treasury Branches Dept. of Attorney General, Alberta Security Commission B.C.:—Dept. of Finance, Inspector of Trust Companies
Dept. of Registrar General Superintendent of Bankruptcy Dominion Bureau of Statistics	<div>BANKRUPTCY</div>	Nfld.:—Dept. of Justice P.E.I., N.S., N.B., Alta., B.C.:—Depts. of Attorney General Que.:—Minister of Justice Ont.:—Dept. of Financial and Commercial Affairs Man., Sask.:—Depts. of Provincial Secretary
National Library (information re Canadian publications and books in Canadian libraries; national bibliographies of other countries) National Gallery of Canada (information on art books and periodicals) National Research Council National Science Library (information re identification and location of scientific serials and research reports) Queen's Printer (Official Classification of Canadian Government Publications) Dominion Bureau of Statistics Information Division (for statistical publications)	<div>BIBLIOGRAPHY</div>	Nfld.:—Dept. of Education Public Libraries Board Dept. of Provincial Affairs, Archives P.E.I.:—Dept. of Education Legislative Librarian N.S., N.B.:—Depts. of Education, Provincial Librarians Que.:—Office of Provincial Secretary Provincial Archives Provincial Library Dept. of Cultural Affairs Ont.:—Dept. of Education, Provincial Library Service Legislative Librarian Man.:—Dept. of Education, Provincial Librarian Sask.:—Provincial Library Legislative Librarian Alta.:—Dept. of Provincial Secretary Provincial Library and Archives B.C.:—Dept. of Provincial Secretary Provincial Library and Archives Public Library Commission

Sources for Federal Data

Subject

Sources for Provincial Data

**BIRTHS**

See "Vital Statistics"

Dept. of National Health and Welfare  
Dept. of Indian Affairs and Northern  
Development (Y.T. and N.W.T.)

**BLINDNESS  
ALLOWANCES**

Sources same as for "Old Age  
Assistance"

**BROADCASTING**

See "Radio"  
and "Television"

Central Mortgage and Housing  
Corporation (NHA financing,  
house designs, building stand-  
ards)  
Canadian Government Specifications  
Board  
Canadian Standards Association  
Dept. of Finance (Farm Improve-  
ment Loans Act; Small Busi-  
nesses Loans Act)  
Dept. of Indian Affairs and Northern  
Development  
Northern Administration Branch  
Dept. of Industry  
Materials Branch  
Wood Products Branch  
Dept. of Manpower and Immigration  
Employment Stabilization Branch  
(Do-it-now program and munic-  
ipal winter works)  
Dept. of National Health and Welfare  
Hospital Design Division  
Dept. of Public Works  
Design Directorate  
Dept. of Transport  
Air Services Construction Branch  
(airport terminal buildings, etc.)  
Dept. of Veterans Affairs (Soldier  
Settlement and Veterans' Land  
Act)  
Farm Credit Corporation  
National Research Council  
Division of Building Research  
Dominion Bureau of Statistics

**BUILDING  
CONSTRUCTION**

Nfld., N.B.:—Depts. of Public Works  
P.E.I.:—Dept. of Industry and  
Natural Resources  
N.S.:—Dept. of Trade and Industry  
Que.:—Farm Credit Bureau, Family  
Housing Division  
Dept. of Industry and Commerce,  
Bureau of Statistics  
Ont.:—Dept. of Labour, Factory  
Inspection Branch  
Ontario Housing Corporation  
Dept. of Public Works  
Dept. of Municipal Affairs, Com-  
munity Planning Branch  
Man.:—Dept. of Industry and Com-  
merce  
Sask.:—Dept. of Labour  
Alta.:—Dept. of Industry and De-  
velopment, Alberta Bureau of  
Statistics  
Dept. of Labour  
B.C.:—Dept. of Industrial Develop-  
ment, Trade, and Commerce,  
Bureau of Economics and  
Statistics

Dept. of Trade and Commerce  
Industrial Materials Branch  
Dept. of Industry  
Chemicals Branch  
Dominion Bureau of Statistics

**CHEMICALS**

Que.:—Dept. of Natural Resources  
Ont.:—Ontario Research Founda-  
tion  
Man.:—Dept. of Industry and Com-  
merce, Manitoba Development  
Authority  
B.C.:—British Columbia Research  
Council

Dept. of Secretary of State  
Citizenship Registration Branch  
National Film Board

**CITIZENSHIP**  
See also  
"Population"

Ont.:—Dept. of Provincial Secretary  
and Citizenship

Sources for Federal Data	Subject	Sources for Provincial Data
Emergency Measures Organization Dept. of Defence Production Emergency Supply Planning Branch Dept. of National Health and Welfare Emergency Health Services Emergency Welfare Services	CIVIL DEFENCE	Nfld.:—Dept. of Provincial Affairs P.E.I., N.S.:—Depts. of Provincial Secretary N.B.:—Dept. of Municipal Affairs Que.:—Dept. of Family and Social Welfare Ont.:—Dept. of Attorney General, Emergency Measures Organization Man.:—Dept. of Provincial Secretary, Civil Defence Branch Sask.:—Emergency Measures Organization Executive Council Alta.:—Emergency Measures Organization B.C.:—Dept. of Provincial Secretary, Provincial Co-ordinator
Dept. of Transport Meteorological Branch, Toronto National Research Council Division of Building Research, (Climatological Atlas of Canada, National Building Code) Queen's Printer (agent for World Meteorological Organization publications)	CLIMATE	Que.:—Dept. of Natural Resources, Meteorological Bureau Ont.:—Dept. of Agriculture, Farm Economics and Statistics Branch Man.:—Dept. of Agriculture B.C.:—Dept. of Agriculture Dept. of Lands, Forests, and Water Resources, Hydrology Division
Dept. of Energy, Mines and Resources Geological Survey of Canada Mines Branch Mineral Economics Division Dept. of Trade and Commerce Industrial Materials Branch Dominion Coal Board Dominion Bureau of Statistics	COAL	N.S.:—Dept. of Mines N.B.:—Dept. of Lands and Mines Que.:—Dept. of Natural Resources Ont.:—Dept. of Mines Dept. of Energy and Resources Management Man.:—Dept. of Mines and Natural Resources, Mines Branch Sask.:—Dept. of Mineral Resources Dept. of Industry and Commerce Alta.:—Dept. of Mines and Minerals Alberta Research Council B.C.:—Dept. of Mines and Petroleum Resources
Dept. of Registrar General Director of Investigation and Research Restrictive Trade Practices Commission	COMBINES	
Dept. of Transport Telecommunications and Electronics Branch (radio aids, aeronautical and marine navigation) Information Services Meteorological Branch Board of Transport Commissioners (regulation of certain telegraph and telephone companies) Canadian Broadcasting Corporation Canadian Overseas Telecommunication Corporation Dept. of Indian Affairs and Northern Development Northern Administration Branch (Y. T. and N.W.T.) Dept. of Industry Electrical and Electronics Branch Queen's Printer (agent for International Telecommunication Union publications) Dominion Bureau of Statistics	COMMUNICATIONS See also "Postal Service"	Nfld.:—Dept. of Economic Development Board of Public Utilities Commissioners P.E.I.:—Tourist and Information Bureau Dept. of Public Works N.S.:—Board of Commissioners of Public Utilities N.B.:—Dept. of Provincial Secretary, Travel Bureau Que.:—Dept. of Transportation and Communications Ont.:—Ontario Telephone Service Commission Ontario Provincial Police, Radio Communications Branch Man.:—Manitoba Telephone System Sask.:—Saskatchewan Government Telephones Alta.:—Alberta Government Telephones B.C.:—Dept. of Commercial Transport



Sources for Federal Data

Subject

Sources for Provincial Data

Central Mortgage and Housing Corporation  
Dept. of Indian Affairs and Northern Development  
Northern Administration Branch  
Dept. of National Health and Welfare (social welfare and recreation)  
National Capital Commission  
Information Division (general information on the Plan for the National Capital of Canada)  
National Film Board

COMMUNITY  
PLANNING

Nfld.:—Dept. of Municipal Affairs and Supply  
Dept. of Community and Social Development  
P.E.I., N.S., N.B.:—Depts. of Municipal Affairs  
Que.:—Dept. of Municipal Affairs  
Industrial Development Bureau  
Economic Advisory Council  
Ont.:—Dept. of Municipal Affairs, Community Planning Branch  
Dept. of Education, Community Programmes Branch  
Man.:—Dept. of Municipal Affairs, Planning Branch  
Sask.:—Dept. of Municipal Affairs, Community Planning Branch  
Executive Council, Economic Advisory and Planning Board  
Centre for Community Studies, University of Saskatchewan  
Alta.:—Dept. of Municipal Affairs, Town and Rural Planning Branch  
B.C.:—Dept. of Municipal Affairs, Regional Planning Division  
Lower Mainland Regional Planning Board

Dept. of Indian Affairs and Northern Development  
National and Historic Parks Branch, Canadian Wildlife Service  
Northern Administration Branch  
Dept. of Agriculture  
Prairie Farm Rehabilitation Administration  
Information Division  
Economics Branch  
Dept. of Fisheries  
Information and Consumer Service  
Dept. of Forestry and Rural Development  
Information and Technical Services Division  
National Capital Commission  
National Film Board

CONSERVATION

Nfld.:—Dept. of Mines, Agriculture, and Resources  
P.E.I.:—Dept. of Industry and Natural Resources  
N.S., Alta.:—Depts. of Lands and Forests  
N.B.:—Dept. of Lands and Mines  
Que.:—Dept. of Lands and Forests  
Dept. of Tourism, Game and Fish  
Dept. of Natural Resources  
Ont.:—Dept. of Energy and Resources Management, Conservation Authorities Branch  
Ontario Agricultural College, Guelph  
Man.:—Dept. of Mines and Natural Resources  
Sask.:—Dept. of Natural Resources  
Dept. of Agriculture, Conservation and Development Branch  
B.C.:—Dept. of Lands, Forests and Water Resources  
Dept. of Recreation and Conservation

Privy Council Office  
Dept. of Justice  
Dept. of Registrar General (Great Seal of Canada, etc.)  
Dept. of Secretary of State  
Library of Parliament  
Public Archives  
Queen's Printer (Statutes of Canada, Hansard, Organization of the Government of Canada Handbook, etc.)

CONSTITUTION

All Provinces except Nfld. and B.C.:—Depts. of Attorney General  
Nfld.:—Dept. of Justice  
B.C.:—Provincial Secretary

Dominion Bureau of Statistics

CONSUMER  
PRICE INDEX

See also  
"Cost of Living"

<u>Sources for Federal Data</u>	<u>Subject</u>	<u>Sources for Provincial Data</u>
Dept. of Agriculture Economics Branch Central Mortgage and Housing Corporation (mortgage-lending activities) Dept. of Fisheries Economics Service Dept. of Indian Affairs and Northern Development Northern Administration Branch (Eskimo co-operatives) Dept. of Registrar General Corporations Branch	<div>CO-OPERATIVES (including Credit Unions)</div>	Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I., N.S.:—Depts. of Provincial Secretary N.B.:—Dept. of Agriculture Que.:—Dept. of Agriculture and Colonization Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Agriculture and Food, Co-operatives Branch Man.:—Dept. of Agriculture and Conservation, Co-operative Serv- ices Branch Treasury Dept., Superintendent of Insurance Sask.:—Dept. of Co-operation and Co-operative Development Alta.:—Dept. of Industry and Development, Co-operative Ac- tivities Branch B.C.:—Attorney-General's Dept., Registrar of Companies
Dominion Bureau of Statistics (wholesale and retail prices and consumer price index)	<div>COST OF LIVING</div>	Nfld.:—Dept. of Municipal Affairs and Supply Ont.:—Dept. of Economics and De- velopment Man.:—Dept. of Industry and Commerce, Business Research Branch Sask.:—Dept. of Labour Alta.:—Dept. of Industry and Development, Alberta Bureau of Statistics B.C.:—Dept. of Industrial Develop- ment, Trade, and Commerce, Bureau of Economics and Sta- tistics
Canada Council Dept. of Indian Affairs and Northern Development National and Historic Parks Branch Northern Administration Branch Dept. of Industry National Design Branch Dept. of Manpower and Immigration Canada Immigration Division Dept. of Veterans Affairs (veterans only) National Gallery of Canada (reference library, films) National Library (books) Public Archives Queen's Printer (UNESCO coloured slides) National Film Board	<div>CREATIVE ARTS AND HANDICRAFTS</div>	Nfld.:—Dept. of Education P.E.I.:—Dept. of Tourist Develop- ment Dept. of Education, Physical Fitness Division N.S.:—Dept. of Trade and Industry, Handicrafts Division Nova Scotia College of Art N.B.:—Dept. of Finance and Indus- try Que.:—Dept. of Cultural Affairs Dept. of Agriculture and Coloni- zation Ont.:—Dept. of Education, Com- munity Programmes Branch Dept. of Agriculture and Food, Home Economics Service Ontario Gift Foundation Man.:—Dept. of Agriculture and Conservation, Extension Service Manitoba Development Authority Sask.:—Dept. of Education, Con- tinuing Education Branch Saskatchewan Arts Board Alta.:—Dept. of Provincial Secretary B.C.:—Provincial Museum (Indian handicrafts) Dept. of Education, Community Programmes Branch

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of Solicitor General  
Canadian Penitentiary Service  
National Parole Board  
Royal Canadian Mounted Police  
Dept. of Justice  
Criminal Law Section  
Dept. of National Health and Welfare  
Research and Statistics Division  
National Film Board  
Dominion Bureau of Statistics

**CRIME AND  
DELINQUENCY**

All Provinces except Nfld.:—Depts.  
of Attorney General  
Nfld.:—Dept. of Justice  
Dept. of Public Welfare  
N.S., Alta.:—Depts. of Public Wel-  
fare  
P.E.I., Sask.:—Depts. of Welfare  
Que.:—Dept. of Family and Social  
Welfare  
Dept. of Youth  
Dept. of Industry and Commerce,  
Bureau of Statistics  
Ont.:—Dept. of Reform Institutions  
B.C.:—Dept. of Social Welfare

See pp. 142-150 of this volume for a  
list of Crown corporations giving the  
functions of each and the Cabinet  
Minister through whom each reports  
to Parliament.

**CROWN  
CORPORATIONS**

For information with regard to in-  
dividual Crown corporations apply  
as follows:—  
Nfld.:—Dept. of Justice  
Dept. of Public Works  
P.E.I.:—Dept. of Industry and  
Natural Resources  
N.S.:—Dept. of Trade and Industry  
N.B.:—Dept. of Finance and In-  
dustry, Treasury Board  
Ont.:—Dept. of Provincial Secretary  
Man.:—Treasury Dept.  
Dept. of Public Utilities  
Sask.:—Government Finance Office  
Alta.:—Dept. of Industry and De-  
velopment  
B.C.:—Attorney-General's Dept.

Bank of Canada  
Dept. of Finance  
Royal Canadian Mint

**CURRENCY**

Dept. of Agriculture  
Dairy Products Division  
Health of Animals Branch  
Research Branch  
Animal Research Institute  
Food Research Institute  
Canadian Dairy Commission  
Dept. of Industry  
Food Products Branch  
Dept. of Trade and Commerce  
Agriculture and Fisheries Branch  
National Film Board  
Dominion Bureau of Statistics

**DAIRYING**

Nfld.:—Dept. of Mines, Agriculture,  
and Resources  
P.E.I., N.S.:—Depts. of Agriculture  
N.B., Ont., Alta., B.C.:—Depts.  
of Agriculture, Dairy Branches  
(also Milk Industry Board of  
Ont. and Milk Control Board  
for B.C.)  
Que.:—Dept. of Agriculture and  
Colonization, Dairy Products  
Branch  
Dept. of Industry and Commerce,  
Bureau of Statistics  
Man.:—Dept. of Agriculture and  
Conservation, Dairy Branch  
Sask.:—Dept. of Agriculture, Ani-  
mal Industry Branch  
Milk Control Board

**DEATHS**  
See "Vital Statistics"

**DEFENCE**

See also  
"Civil Defence"

Dept. of National Defence  
Information Service  
Defence Research Board  
Dept. of Defence Production  
Canadian Commercial Corporation  
Canadian Arsenal Limited  
Dept. of External Affairs (NATO)



Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of National Health and Welfare Dept. of Indian Affairs and Northern Development (Y.T. and N.W.T.) Dept. of Veterans Affairs (war disabled veterans)	<div>DISABLED PERSONS ALLOWANCES</div>	Nfld.:—Dept. of Public Welfare, The Old Age Assistance Board P.E.I.:—Dept. of Welfare, Director of Disabled Persons Allowances N.S.:—Old Age Assistance Board N.B.:—Dept. of Youth and Welfare, Director of Disabled Persons Allowances Que.:—Dept. of Family and Social Welfare, Social Allowances Commission Ont.:—Dept. of Public Welfare, Welfare Allowances Branch Man.:—The Old Age Assistance and Blind Persons Allowances Board Sask.:—Dept. of Welfare, Director of Public Assistance Alta.:—Dept. of Public Welfare, Pensions Board B.C.:—The Disabled Persons Allowances Board
Economic Council of Canada Dept. of Finance Dept. of Manpower and Immigration Program Evaluation Branch Dept. of Secretary of State (financial support to post-secondary education)	<div>ECONOMIC PLANNING</div>	Nfld.:—Dept. of Economic Development N.S.:—Dept. of Finance and Economics Ont.:—Dept. of Economics and Development Man.:—Dept. of Municipal Affairs, Planning Branch Dept. of Industry and Commerce Sask.:—Dept. of Industry and Commerce Alta.:—Dept. of Industry and Development
Bank of Canada Central Mortgage and Housing Corporation Dept. of Agriculture Economics Branch Dept. of Defence Production Economics and Statistics Branch Dept. of Energy, Mines and Resources Mineral Economics Division Dept. of Finance Financial Affairs Division Dept. of Fisheries Economics Service Dept. of Forestry and Rural Development Information and Technical Services Division Dept. of Indian Affairs and Northern Development Administration Services Northern Administration Branch Northern Co-ordination and Research Dept. of Industry Program Advisory Group Dept. of Labour Economics and Research Branch Dept. of Manpower and Immigration Research Branch Dept. of National Health and Welfare Research and Statistics Directorate Dept. of Public Works Planning Directorate Dept. of Trade and Commerce Economics Branch Dept. of Transport Economic Policy and Research Branch Fisheries Research Board Public Archives (early data) Queen's Printer (agent for UNESCO, Commonwealth Economic Committee and OECD publications) Special Planning Secretariat, Privy Council Office, Ottawa Dominion Bureau of Statistics	<div>ECONOMIC AND SOCIAL RESEARCH</div>	Nfld.:—Dept. of Economic Development Dept. of Community and Social Development P.E.I.:—Dept. of Industry and Natural Resources N.S.:—Dept. of Trade and Industry Nova Scotia Research Foundation N.B.:—Dept. of Finance and Industry Que.:—Dept. of Industry and Commerce, Economic Research Bureau, Bureau of Statistics, Industrial Commission Branch Ont.:—Dept. of Economics and Development Dept. of Agriculture, Farm Economics and Statistics Branch Dept. of Municipal Affairs, Community Planning Branch Alcoholism and Drug Addiction Research Foundation of Ontario Man.:—Dept. of Industry and Commerce, Business Research Branch Manitoba Development Authority Manitoba Economic Consultative Board Treasury Dept., Economic Research Division Dept. of Agriculture and Conservation, Economic Division Sask.:—Executive Council Economic Advisory and Planning Board Dept. of Industry and Commerce Dept. of Co-operation and Co-operative Development, Research and Statistical Division Centre for Community Studies, University of Saskatchewan Alta.:—Dept. of Industry and Development B.C.:—Dept. of Industrial Development, Trade and Commerce, Bureau of Economics and Statistics

Sources for Federal Data

Subject

Sources for Provincial Data

Dominion Bureau of Statistics  
 Canada Council  
 Canadian Broadcasting Corporation  
 (educational broadcasts)  
 Dept. of Finance (university grants;  
 student loans)  
 Dept. of Fisheries  
 Information and Consumer Service  
 Dept. of Forestry and Rural Develop-  
 ment  
 Information and Technical Serv-  
 ices Division  
 Dept. of Indian Affairs and Northern  
 Development  
 Northern Administration Branch  
 (Y.T. and N.W.T.)  
 Dept. of Manpower and Immigration  
 Manpower Training Branch  
 Dept. of National Defence  
 Director of Education (service  
 dependants' schools)  
 Dept. of National Health and Welfare  
 Dept. of Veterans Affairs (veterans  
 and children of war dead)  
 National Capital Commission  
 Information and Historical Divi-  
 sion  
 National Gallery of Canada (lectures,  
 tours, films)  
 National Research Council  
 Division of Administration and  
 Awards (science and engineering  
 students registered in Canadian  
 graduate schools)  
 Queen's Printer (agent for UNESCO  
 publications)

EDUCATION  
 See also  
 "Motion Pictures"  
 and "Photographic  
 Material"

All Provinces:—Depts. of Education  
 (technical, visual, audio and all  
 other phases of education)

Additional:—Alta.:—Dept. of La-  
 bour, Apprenticeship Board  
 B.C.:—Dept. of Labour, Director of  
 Apprenticeship

Chief Electoral Office  
 Library of Parliament  
 Public Archives

ELECTIONS

Nfld.:—Dept. of Provincial Affairs  
 P.E.I., N.S., N.B., Ont.:—Depts. of  
 Provincial Secretary  
 Que.:—Chief Returning Officer  
 Man., B.C.:—Chief Electoral Of-  
 ficers  
 Sask., Alta.:—Clerks of the Execu-  
 tive Councils

Dept. of Energy, Mines and Re-  
 sources  
 Water Resources Branch  
 Dept. of Industry  
 Area Development Agency  
 National Energy Board  
 National Research Council  
 Radio and Electrical Engineering  
 Division  
 Northern Canada Power Commis-  
 sion  
 National Film Board  
 Dominion Bureau of Statistics

ELECTRIC  
 POWER

Nfld.:—Newfoundland and Labrador  
 Power Commission  
 P.E.I.:—Public Utility Commission  
 N.S., Alta.: Power Commissions  
 N.B.:—New Brunswick Electric  
 Power Commission  
 Que.:—Hydro-Electric Commission  
 Dept. of Natural Resources  
 Dept. of Agriculture and Coloniza-  
 tion, Rural Electrification Bu-  
 reau  
 Ont.:—Dept. of Energy and Re-  
 sources Management  
 The Hydro-Electric Power Com-  
 mission of Ontario  
 Man.:—Manitoba Hydro  
 Dept. of Public Utilities  
 Sask.:—Saskatchewan Power Cor-  
 poration  
 B.C.:—British Columbia Hydro and  
 Power Authority

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Labour Economics and Research Branch Dept. of Manpower and Immigration Canada Immigration Division Canada Manpower Division (Canada Manpower Centres) Public Service Commission (staffing the public service) Queen's Printer (agent for ILO publications) Dominion Bureau of Statistics	EMPLOYMENT	Nfld., N.S., N.B., Sask.—Depts of Labour P.E.I.—Dept. of Labour Civil Service Commission Que.—Dept. of Labour, Provincial Employment Bureau Ont.—Dept. of Economics and Development Dept. of Labour Dept. of Civil Service Man.—Dept. of Labour Dept. of Industry and Commerce Alta.—Dept. of Labour Dept. of Industry and Develop- ment B.C.—Dept. of Labour Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Indian Affairs and Northern Development Northern Administration Branch (education, welfare, handicrafts, livelihood) Northern Co-ordination and Re- search Dept. of National Health and Welfare (health and hospital services)	ESKIMOS	Nfld.—Dept. of Labrador Affairs Dept. of Public Welfare Que.—Dept. of Natural Resources, New Quebec Branch
Dept. of Trade and Commerce Canadian Government Exhibition Commission Trade Fairs and Missions Branch Trade Publicity Branch Central Mortgage and Housing Cor- poration (housing exhibits) Dept. of Agriculture Livestock Division Dept. of Energy, Mines and Re- sources Public Relations and Information Services Mineral Economics Division Dept. of Fisheries Information and Consumer Service Dept. of Indian Affairs and Northern Development Information Services Division Dept. of Industry Information Division Dept. of National Defence Directorate of Exhibitions and Dis- plays Dept. of National Health and Welfare Information Division Dept. of Secretary of State Canadian War Museum National Aviation Museum National Museum of Canada National Capital Commission National Gallery of Canada National Film Board	EXHIBITIONS	Nfld.—Dept. of Provincial Affairs P.E.I., N.S., N.B.—Depts. of Agriculture Que.—Dept. of Agriculture and Colonization Dept. of Industry and Commerce Office of Provincial Secretary Dept. of Cultural Affairs Ont.—Most Ontario Departments organize exhibitions Man.—Dept. of Agriculture and Conservation, Extension Service Dept. of Industry and Commerce Sask.—Dept. of Agriculture Dept. of Industry and Commerce Alta.—Dept. of Provincial Secre- tary Dept. of Agriculture Alberta Government Publicity Bureau B.C.—Dept. of Agriculture Dept. of Industrial Development, Trade, and Commerce
Dept. of External Affairs Information Division Dept. of Labour International Labour Affairs Branch (ILO; OECD) Queen's Printer (agent for inter- national organizations publica- tions)	EXTERNAL AFFAIRS See also "Trade"	



Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of National Health and Welfare  
Dept. of Manpower and Immigration  
(assistance to families entering  
Canada not yet eligible for  
family allowances)

**FAMILY  
ALLOWANCES**

Dept. of Agriculture  
Production and Marketing Branch  
Plant Research Institute  
Dept. of Trade and Commerce  
Agriculture and Fisheries Branch  
National Research Council  
Prairie Regional Laboratory, Sas-  
katoon, Sask. (utilization of  
crops and crop products)  
Queen's Printer (agent for FAO  
publications)  
National Film Board  
Dominion Bureau of Statistics

**FIELD CROPS**

Nfld.:—Dept. of Mines, Agriculture,  
and Resources  
P.E.I., N.S., N.B.:—Depts. of Agri-  
culture  
Que.:—Dept. of Agriculture and  
Colonization  
Dept. of Industry and Commerce,  
Bureau of Statistics  
Ont.:—Dept. of Agriculture and  
Food  
Man.:—Dept. of Agriculture and  
Conservation, Soils and Crops  
Branch  
Sask.:—Dept. of Agriculture, Plant  
Industry Branch  
Alta., B.C.:—Depts. of Agriculture,  
Field Crops Branch

Dept. of Finance  
Bank of Canada  
Queen's Printer (agent for GATT  
publications)  
Treasury Board  
Dominion Bureau of Statistics

**FINANCE**  
See also "Taxation"

Nfld., B.C.:—Depts. of Finance  
P.E.I., Man., Sask., Alta.:—  
Depts. of Provincial Treasurer  
N.S.:—Dept. of Finance and Eco-  
nomics  
N.B.:—Dept. of Finance and In-  
dustry  
Que.:—Dept. of Finance  
Dept. of Industry and Commerce,  
Bureau of Statistics  
Ont.:—Treasury Dept.  
Dept. of Economics and Develop-  
ment

Dept. of Forestry and Rural De-  
velopment  
Information and Technical Services  
Division (forest fire prevention  
and forest products fire re-  
tardants)  
Board of Transport Commissioners  
(forest-fire protection along rail-  
way lines)  
Dept. of Indian Affairs and Northern  
Development  
National and Historic Parks  
Branch  
Northern Administration Branch  
Dept. of Public Works  
Dominion Fire Commissioner  
National Research Council  
Fire Research Section

**FIRE  
PREVENTION**

All Provinces:—Provincial Fire  
Marshals (for urban and rural  
fire losses)  
Nfld.:—Dept. of Mines, Agriculture,  
and Resources  
P.E.I.:—Dept. of Public Works  
N.S.:—Dept. of Labour  
N.B.:—Dept. of Lands and Mines  
Dept. of Attorney General  
Que.:—Dept. of Lands and Forests  
Forest Protection Service  
Dept. of Municipal Affairs, Fire  
Commissioner  
Ont.:—Dept. of Lands and Forests,  
Forest Protection Branch  
Dept. of Public Works, Fire Pre-  
vention Officer  
Dept. of Attorney General, Office  
of the Fire Marshal  
Man.:—Dept. of Mines and Natural  
Resources  
Dept. of Labour, Fire Commis-  
sioner  
Sask.:—Dept. of Natural Resources  
Dept. of Labour, Fire Commis-  
sioner  
Alta.:—Dept. of Lands and Forests  
Dept. of Provincial Secretary  
B.C.:—Dept. of Lands, Forests and  
Water Resources

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Fisheries Information and Consumer Service Dept. of Finance Fisheries Improvement Loans Act Dept. of Indian Affairs and Northern Development Northern Administration Branch (Eskimo fishing co-operatives) Dept. of Industry Food Products Branch Dept. of Trade and Commerce Agriculture and Fisheries Branch Dept. of Veterans Affairs (veterans settled as commercial fishermen) Fisheries Research Board Queen's Printer (agent for FAO publications) Unemployment Insurance Commission (insurance for fishermen) National Film Board Dominion Bureau of Statistics	FISHERIES	Nfld., P.E.I., N.S., N.B.:—Depts. of Fisheries Que.:—Dept. of Tourism, Game and Fish Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Lands and Forests, Fish and Wildlife Branch Man.:—Dept. of Mines and Natural Resources, Fisheries Branch Sask.:—Dept. of Natural Resources, Fisheries Branch Alta.:—Dept. of Lands and Forests, Fish and Game Branch B.C.:—Dept. of Recreation and Conservation Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of National Health and Welfare, Food and Drug Laboratory (for standards and methods of control of quality, purity and safety of food and drugs) Dept. of Agriculture (for inquiries on standards for meat, canned food, fruit, honey, maple products, vegetables, dairy products, poultry, etc.) Dept. of Fisheries (standards for fish products) Dept. of Industry Food Products Branch Dept. of Registrar General Patent and Copyright Office (licensing of patents) Dept. of Trade and Commerce Industrial Materials Branch Queen's Printer (agent for FAO publications)	FOOD AND DRUGS  See also "Nutrition"	All Provinces:—Depts. of Health (sanitary inspection of food supplies)
	FOREIGN AFFAIRS See "External Affairs"	
Dept. of Forestry and Rural Development Information and Technical Services Division Dept. of Industry Wood Products Branch Dept. of Trade and Commerce Industrial Materials Branch National Film Board (films, filmstrips, photographs, in relation to departmental conservation and development programs) Dominion Bureau of Statistics	FOREST RESOURCES AND INDUSTRIES	Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S., Que., Ont., Alta.:—Depts. of Lands and Forests N.B.:—Dept. of Lands and Mines Man.:—Dept. of Mines and Natural Resources, Forestry Branch Sask.:—Dept. of Natural Resources, Forestry Branch Dept. of Industry and Information Saskatchewan Timber Board B.C.:—Dept. of Lands, Forests and Water Resources Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
	FUEL See "Coal", "Oil and Natural Gas" and "Electric Power"	

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of Agriculture  
Production and Marketing Branch  
Livestock Division (grading)  
Research Branch (production)  
Dept. of Indian Affairs and Northern  
Development  
Northern Administration Branch  
(Y.T. and N.W.T.)  
Dominion Bureau of Statistics

**FUR FARMING**

See also  
"Trapping"

Nfld.:—Dept. of Mines, Agriculture,  
and Resources  
Dept. of Economic Development  
P.E.I., N.S., N.B., Alta., B.C.:—  
Depts. of Agriculture  
Que.:—Dept. of Agriculture and  
Colonization  
Dept. of Industry and Com-  
merce, Bureau of Statistics  
Ont.:—Dept. of Lands and Forests  
Man.:—Dept. of Mines and Natural  
Resources, Game Branch  
Sask.:—Dept. of Natural Resources  
Saskatchewan Fur Marketing  
Service

Dept. of Energy, Mines and Re-  
sources  
Geographical Branch  
Canadian Permanent Committee  
on Geographical Names  
Dept. of Agriculture  
Soils Research Institute  
Fisheries Research Board (ocean-  
ography)  
Public Archives (early maps)  
National Film Board

**GEOGRAPHY**

Nfld.:—Dept. of Mines, Agriculture,  
and Resources  
P.E.I.:—Travel Bureau  
N.S.:—Dept. of Mines  
N.B.:—Dept. of Lands and Mines  
Que.:—Dept. of Lands and Forests  
Dept. of Industry and Commerce,  
Economic Research Bureau,  
Drafting Division  
Dept. of Natural Resources  
Northern Studies Centre, Laval  
University  
Ont.:—Dept. of Lands and Forests,  
Lands and Surveys Branch  
Dept. of Mines  
Ontario Agricultural College  
Dept. of Economics and Develop-  
ment  
Man.:—Dept. of Mines and Natural  
Resources  
Sask.:—Dept. of Natural Resources  
Dept. of Industry and Commerce  
Alta.:—Dept. of Lands and Forests  
University of Alberta  
Dept. of Highways, Surveys  
Branch  
B.C.:—Dept. of Lands, Forests and  
Water Resources

Dept. of Energy, Mines and Re-  
sources  
Geological Survey of Canada

**GEOLOGY**

Nfld.:—Dept. of Mines, Agriculture,  
and Resources  
P.E.I.:—Dept. of Industry and  
Natural Resources  
N.S.:—Dept. of Mines  
N.B.:—Dept. of Lands and Mines  
Que.:—Dept. of Natural Resources,  
Geological Surveys Branch  
Ont.:—Dept. of Mines, Geological  
Branch  
Man.:—Dept. of Mines and Natural  
Resources, Mines Branch  
Sask.:—Dept. of Mineral Resources  
Alta.:—Dept. of Mines and Minerals  
University of Alberta  
B.C.:—Dept. of Mines and Petro-  
leum Resources

Dept. of the Secretary of State  
(federal-provincial channel of  
communication)  
Chief Electoral Office (Electoral Act  
and voters lists)  
Dept. of Indian Affairs and Northern  
Development (Y.T. and N.W.T.)  
Library of Parliament  
Privy Council Office (appointments,  
orders in council, statutory  
orders and regulations)  
Public Archives (early official rec-  
ords)  
Public Service Commission (staffing  
the public service)  
Queen's Printer (distribution and  
sale of statutory orders and  
regulations)

**GOVERNMENT**  
For Senate and  
House of Commons  
of Canada  
see "Parliament"

Nfld.:—Dept. of Provincial Affairs  
P.E.I., N.S., N.B., Ont., Man.,  
Sask., Alta., B.C.:—Depts. of  
Provincial Secretary  
Que.:—Office of Provincial Secretary



Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of National Health and Welfare Queen's Printer (agent for WHO publications) National Film Board Dominion Bureau of Statistics	<b>HEALTH</b> <b>For Health of Veterans</b> see "Veterans Affairs"	Nfld., P.E.I., N.B., Que., Ont., Man.:—Depts. of Health N.S., Alta.:—Depts. of Public Health Sask.:—Dept. of Public Health Saskatchewan Medical Care Commission B.C.:—Dept. of Health Services and Hospital Insurance
Public Archives Dept. of Indian Affairs and Northern Development National and Historic Parks Branch Government of the Northwest Territories Dept. of National Defence Directorate of History Dept. of Secretary of State Canadian War Museum National Aviation Museum National Museum of Canada Dept. of Veterans Affairs (war memorials and war cemeteries) National Capital Commission (Information and Historical Division) National Gallery of Canada (historical paintings; war collections) National Film Board Dominion Bureau of Statistics	<b>HISTORY</b>	Nfld.:—Legislative Library Memorial University Gosling Memorial Library Dept. of Provincial Affairs, Public Archives and Museum P.E.I.:—Travel Bureau, Legislative Librarian N.S.:—Public Archives N.B.:—Dept. of Education Legislative Library Que.:—Office of Provincial Secretary, Provincial Archives Provincial Library Dept. of Cultural Affairs Ont.:—Legislative Library Dept. of Tourism and Information, Historical Branch Dept. of Public Records and Archives Man.:—Provincial Library and Archives Sask.:—Legislative Library, Archives Division Alta.:—Archives, Provincial Library Dept. of Provincial Secretary, Museum Branch B.C.:—Dept. of Provincial Secretary, Provincial Librarian and Archivist
Dept. of Agriculture Production and Marketing Branch (grading and inspection) Fruit and Vegetable Division Plant Products Division Plant Protection Division Research Branch Plant Research Institute Queen's Printer (agent for FAO publications)	<b>HORTICULTURE</b>	Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I.:—Dept. of Agriculture N.S., N.B., Alta., B.C.:—Depts. of Agriculture, Horticultural Branches Que.:—Dept. of Agriculture and Colonization, Horticultural Branch Ont.:—Dept. of Agriculture and Food Man.:—Dept. of Agriculture and Conservation Sask.:—Dept. of Agriculture, Plant Industry Branch
Dept. of National Health and Welfare Dept. of Indian Affairs and Northern Development Northern Administration Branch (Y.T. and N.W.T.) Dept. of National Defence Office of the Surgeon General (National Defence Medical Centre) Dept. of Veterans Affairs (veterans hospitals) Queen's Printer (agent for WHO publications) Dominion Bureau of Statistics	<b>HOSPITALS AND HOSPITAL INSURANCE</b>	Nfld., N.B., Que.:—Depts. of Health P.E.I., Ont.:—Hospital Services Commission N.S.:—Hospital Insurance Commission Man.:—Manitoba Hospital Commission Sask., Alta.:—Depts. of Public Health B.C.:—Dept. of Health Services and Hospital Insurance
	<b>HOUSE OF COMMONS</b> See "Parliament"	

Sources for Federal Data

Subject

Sources for Provincial Data

Central Mortgage and Housing Corporation (National Housing Act financing; loans and subsidies for housing)  
 Dept. of Indian Affairs and Northern Development  
 Northern Administration Branch (Eskimo housing)  
 Dept. of Veterans Affairs (home construction assistance for veterans)  
 National Research Council  
 Division of Building Research (construction materials, building codes and practice, soil and snow mechanics, housing standards)  
 Dominion Bureau of Statistics

HOUSING

Nfld., P.E.I.:—Dept. of Municipal Affairs  
 N.S.:—Nova Scotia Housing Commission  
 Que.:—Dept. of Agriculture and Colonization, Quebec Farm Credit Bureau  
 Ont.:—Ontario Housing Corporation  
 Man.:—Dept. of Industry and Commerce  
 Manitoba Housing Commission  
 Sask.:—Dept. of Social Welfare, Housing Branch  
 Alta.:—Dept. of Industry and Development, Commercial Branch  
 B.C.:—Dept. of Finance, Housing Commissioner

Dept. of Manpower and Immigration  
 Canada Immigration Division  
 Dept. of National Health and Welfare  
 Quarantine, Immigration Medical and Sick Mariners Division  
 Dominion Bureau of Statistics

IMMIGRATION

P.E.I.:—Dept. of Industry and Natural Resources  
 Ont.:—Dept. of Economics and Development, Immigration Branch  
 Man.:—Dept. of Industry and Commerce, Immigration Branch  
 Sask.:—Dept. of Social Welfare  
 Alta.:—Dept. of Industry and Development  
 B.C.:—British Columbia House, London, England and San Francisco, California

INCOME TAX  
 See "Taxation"

Dept. of Registrar General  
 Corporations Branch

INCORPORATION  
 OF  
 COMPANIES AND  
 ASSOCIATIONS

Dept. of Indian Affairs and Northern Development  
 Indian Affairs Branch  
 Dept. of National Health and Welfare (health and hospital services)

INDIANS

Nfld.:—Dept. of Public Welfare (Indians in Labrador)  
 Dept. of Labrador Affairs  
 Que.:—Dept. of Tourism, Game and Fish  
 Ont.:—Dept. of Public Welfare  
 Man.:—Dept. of Welfare, Community Development Branch  
 Sask.:—Provincial Committee on Minority Groups  
 Executive Council  
 Alta.:—Dept. of Industry and Development, Community Development Branch  
 B.C.:—Dept. of Labour, Provincial Advisory Committee on Indian Affairs

Dept. of Industry  
 National Design Branch  
 Dept. of Registrar General  
 Patent and Copyright Office

INDUSTRIAL  
 DESIGN

Man.:—Dept. of Industry and Commerce, Manitoba Design Institute

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Insurance (Canadian, British and foreign companies, Federal Public Service insurance) Central Mortgage and Housing Corporation (insures loans made under National Housing Act) Dept. of Agriculture (crop insurance) Dept. of Labour Industrial Pensions and Annuities Branch Dept. of Trade and Commerce Export Credits Insurance Corporation Dept. of Veterans Affairs Veterans Welfare Services Dominion Bureau of Statistics (summary statistics of all types of insurance)	<div>INSURANCE— LIFE, FIRE, ETC.</div> <div>For Unemployment Insurance see "Labour" and for Hospital Insurance "Hospitals and Hospital Insurance"</div>	Nfld.:—Dept. of Provincial Affairs P.E.I., N.S., N.B., B.C.:—Superintendents of Insurance Que.:—Finance Dept., Insurance Branch Ont.:—Dept. of Insurance Man.:—Superintendent of Insurance Manitoba Crop Insurance Agency Sask.:—Superintendent of Insurance, Government Insurance Office Alta.:—Dept. of Provincial Secretary, Supervisor of Insurance
Dept. of Energy, Mines and Resources Mines Branch Mineral Economics Division Dept. of Industry Materials Branch Dept. of Trade and Commerce Economics Branch Industrial Materials Branch Dominion Bureau of Statistics	<div>IRON AND STEEL</div>	Nfld.:—Dept. of Mines, Agriculture and Resources N.S.:—Dept. of Mines Research Foundation N.B.:—Dept. of Lands and Mines Que.:—Dept. of Industry and Commerce, Bureau of Statistics Dept. of Natural Resources Ont.:—Dept. of Economics and Development, Trade and Industry Branch and Office of the Chief Economist Man.:—Dept. of Mines and Natural Resources Dept. of Industry and Commerce Sask.:—Dept. of Mineral Resources Alta.:—Dept. of Mines and Minerals Dept. of Industry and Development Research Council of Alberta B.C.:—Dept. of Mines and Petroleum Resources Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Justice Dept. of Indian Affairs and Northern Development (Y.T. and N.W.T.) Queen's Printer (agent for International Court of Justice publications) Dominion Bureau of Statistics	<div>JUSTICE</div>	All Provinces except Nfld. and Que.:—Depts. of Attorney General Nfld.:—Dept. of Justice Que.:—Minister of Justice
Dept. of Labour Canada Labour Relations Board Conciliation and Arbitration Branch (conciliation of labour disputes) Economics and Research Branch Employee Representation Branch (certification of bargaining agents) Fair Employment Practices Branch (promotion of fair employment practices) Information Services Branch International Labour Affairs Branch Labour-Management Consultation Branch (promotion of labour-management co-operation) Labour Standards Branch Legislation Branch Library Services Branch Women's Bureau	<div>LABOUR, WAGES AND WORKING CONDITIONS</div>	Nfld., P.E.I., N.S., N.B., Man., Sask., Alta.:—Depts. of Labour Que.:—Dept. of Labour Bureau of Statistics Economic Research Bureau



Sources for Federal Data

Dept. of Indian Affairs and Northern Development (Y.T. and N.W.T.)  
 Indian Affairs Branch  
 Dept. of Manpower and Immigration  
 Canada Manpower Division  
 Canada Immigration Division  
 Dept. of National Health and Welfare  
 (occupational health)  
 National Research Council  
 Division of Administration and Awards (recruitment and salary levels of scientific and technical personnel)  
 Queen's Printer (agent for International Labour Office publications)  
 Unemployment Insurance Commission  
 Dominion Bureau of Statistics

Dept. of Energy, Mines and Resources  
 Surveys and Mapping Branch  
 Dept. of Agriculture  
 Prairie Farm Rehabilitation Administration  
 Dept. of Indian Affairs and Northern Development  
 Northern Administration Branch (Y.T. and N.W.T.)  
 Indian Affairs Branch  
 Dept. of Manpower and Immigration  
 Canada Immigration Division  
 Dept. of Veterans Affairs  
 Veterans Land Administration  
 Public Archives (early data *re* settlement)

Dept. of Solicitor General  
 Royal Canadian Mounted Police  
*(Enforces Federal Statutes in all parts of Canada; in the provinces, exclusive of Quebec and Ontario, it carries out, under contract, enforcement of the Criminal Code and Provincial Statutes and polices a number of municipalities; is the only law-enforcement body in the Y.T. and N.W.T.)*

Clerk of the Senate of Canada  
 Clerk of the House of Commons  
 Dept. of Indian Affairs and Northern Development (Y.T. and N.W.T.)  
 Dept. of Justice  
 Library of Parliament  
 Privy Council Office  
 Queen's Printer (distribution and sale of the Statutes of Canada and texts of federal legislation)  
 For Acts administered by individual Federal Depts., see pp. 151-155 of this volume.

Subject

LABOUR, WAGES  
 AND WORKING  
 CONDITIONS—  
*concluded*

LANDS AND  
 LAND  
 SETTLEMENT

LAW  
 ENFORCEMENT

LEGISLATION  
 For  
 Statutory Orders  
 and Regulations  
 see "Government"

LIBRARIES  
 See "Bibliography"

Sources for Provincial Data

Ont.:—Dept. of Labour  
 Dept. of Economics and Development  
 B.C.:—Dept. of Labour  
 Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Nfld.:—Dept. of Mines, Agriculture and Resources  
 P.E.I.:—Commissioner of Public Lands  
 N.S.:—Dept. of Agriculture, Land Settlement Board  
 N.B.:—Dept. of Lands and Mines  
 Que.:—Dept. of Lands and Forests  
 Dept. of Agriculture and Colonization  
 Ont., Alta.:—Depts. of Lands and Forests  
 Man.:—Dept. of Mines and Natural Resources, Lands Branch  
 Sask.:—Dept. of Agriculture, Lands Branch  
 Attorney General, Land Titles  
 B.C.:—Dept. of Agriculture, Land Clearing  
 Dept. of Lands, Forests, and Water Resources

All Provinces except Nfld. and Que.:—Depts. of Attorney General  
 Nfld.:—Dept. of Justice  
 Que.:—Minister of Justice

All Provinces except Nfld., P.E.I., Man. and B.C.:—Depts. of Attorney General  
 Additional:—Ont. and Alta.:—Queen's Printer (distribution and sale of the Statutes and various Acts)  
 Nfld.:—Dept. of Justice  
 P.E.I., B.C.:—Depts. of Provincial Secretary  
 Man.:—Legislative Council

Sources for Federal Data	Subject	Sources for Provincial Data
Chief Electoral Office (for local referendum under Canada Temperance Act) Dept. of Indian Affairs and Northern Development Northern Administration Branch (Y.T. and N.W.T.) Dominion Bureau of Statistics	LIQUOR CONTROL	Nfld.:—Board of Liquor Control P.E.I., Man.:—Liquor Control Commission N.S.:—Liquor Commission N.B., Ont., Alta., B.C.:—Liquor Control Boards Que.:—Liquor Board Sask.:—Liquor Board, Liquor Licensing Commission
Dept. of Agriculture Production and Marketing Branch Livestock Division Health of Animals Branch Contagious Diseases Division Meat Inspection Division Animal Pathology Division Research Branch Animal Research Institute Queen's Printer (agent for FAO publications) National Film Board Dominion Bureau of Statistics	LIVESTOCK	Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I., N.B., Alta., B.C.:—Depts. of Agriculture, Livestock Branches N.S.:—Dept. of Agriculture, Animal Husbandry Branch Que.:—Dept. of Agriculture and Colonization, Animal Products Branch Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Agriculture and Food, Livestock Branch Man.:—Dept. of Agriculture and Conservation, Livestock Branch Sask.:—Dept. of Agriculture, Animal Industry Branch
Dept. of Industry Information Division Industrial Policy Adviser National Design Branch Bank of Canada Industrial Development Bank Dept. of Defence Production (for defence items) Dept. of Finance (Small Businesses Loans Act) Dept. of Registrar General, Corporations Branch National Research Council Canadian Patents and Development Limited (utilization of new scientific processes) Technical Information Service (answering queries from industry on problems of technology and productivity) National Film Board Dominion Bureau of Statistics	MANUFACTURING See also "Crown Corporations"	Nfld.:—Dept. of Economic Development P.E.I.:—Dept. of Industry and Natural Resources N.S.:—Dept. of Trade and Industry N.B.:—Dept. of Finance and Industry Que.:—Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Economics and Development, Office of the Chief Economist Man.:—Dept. of Industry and Commerce Sask.:—Economic Advisory and Planning Board Dept. of Industry and Commerce Alta.:—Dept. of Industry and Development Alberta Bureau of Statistics B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Energy, Mines and Resources Surveys and Mapping Branch Marine Sciences Branch Geological Survey Geographical Branch Observatories Branch Dept. of Agriculture (soil survey and economic survey maps) Dept. of Fisheries Information and Consumer Service (fisheries maps) Dept. of Forestry and Rural Development Information and Technical Services Division (forestry and rural development maps) Dept. of Transport (meteorological maps) National Capital Commission (tourist and planning maps) National Research Council Division of Building Research (Climatological Atlas) Public Archives (maps relating to history and cartography) Dominion Bureau of Statistics (economic and census maps)	MAPS AND CHARTS	Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I.:—Dept. of Public Works and Highways N.S.:—Dept. of Mines Research Foundation N.B.:—Dept. of Lands and Mines Que.:—Dept. of Lands and Forests Dept. of Natural Resources Dept. of Industry and Commerce, Economic Cartography Dept. of Agriculture and Colonization Ont.:—Dept. of Mines Dept. of Lands and Forests Dept. of Highways Dept. of Tourism and Information Man.:—Dept. of Mines and Natural Resources, Surveys Branch Sask.:—Dept. of Natural Resources Dept. of Industry and Commerce Alta.:—Dept. of Lands and Forests Alberta Travel Bureau Dept. of Highways, Surveys Branch B.C.:—Dept. of Lands, Forests, and Water Resources

Sources for Federal Data

Subject

Sources for Provincial Data

**MARRIAGES**  
See "Vital Statistics"

Dept. of Industry  
Information Division  
Dept. of Agriculture  
Economics Branch  
Dept. of Trade and Commerce  
Trade Services Branch  
Commodities Branch  
Dominion Bureau of Statistics

**MERCHANDISING**

Ont.:—Dept. of Economics and Development  
Man., Sask.:—Depts. of Industry and Commerce  
Alta.:—Dept. of Industry and Development  
B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Dept. of Energy, Mines and Resources  
Geological Survey of Canada  
Mines Branch  
Mineral Economics Division  
Dept. of Industry  
Materials Branch  
Dept. of Trade and Commerce  
Economics Branch  
Industrial Materials Branch  
Dominion Bureau of Statistics (for production data)

**METALS**  
See also  
"Iron and Steel"

Nfld.:—Dept. of Mines, Agriculture and Resources  
N.S., Ont.:—Depts. of Mines  
N.B.:—Dept. of Lands and Mines  
Que.:—Dept. of Natural Resources  
Man.:—Dept. of Mines and Natural Resources, Mines Branch  
Sask.:—Dept. of Mineral Resources  
Alta.:—Dept. of Mines and Minerals  
B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics  
Dept. of Mines and Petroleum Resources

Dept. of Energy, Mines and Resources  
Geological Survey of Canada  
Mines Branch  
Mineral Economics Division  
Dept. of Indian Affairs and Northern Development  
Northern Administration Branch (Y.T. and N.W.T.)  
Resource and Economic Development Group  
Dept. of Industry  
Materials Branch  
Dept. of Trade and Commerce  
Industrial Materials Branch  
Dominion Bureau of Statistics (for production data)

**MINING AND MINERALS**

Nfld.:—Dept. of Mines, Agriculture and Resources  
P.E.I.:—Dept. of Industry and Natural Resources  
N.S., Ont.:—Depts. of Mines  
N.B.:—Dept. of Lands and Mines  
Que.:—Dept. of Natural Resources  
Man.:—Dept. of Mines and Natural Resources, Mines Branch  
Sask.:—Dept. of Mineral Resources  
Alta.:—Dept. of Mines and Minerals  
B.C.:—Dept. of Mines and Petroleum Resources

**MOTION PICTURES**

National Film Board  
(Produces documentary films, newsreels and short subjects for theatrical, non-theatrical and television distribution; film-strips and photographs for informational, educational and archival purposes; other visual materials devoted to the interpretation of the Canadian scene to audiences both in Canada and abroad; and maintains a large film preview library for the benefit of government departments and other official bodies.)  
Canadian Broadcasting Corporation  
(Produces 16 mm. films for broadcasting over its own networks and stations. Some of these are available for export sales.)  
Central Mortgage and Housing Corporation (library of films on housing and urban renewal)  
Dept. of Forestry and Rural Development  
Information and Technical Services Division (maintains lending library of forestry training and resource films)  
National Gallery of Canada (library of films on art)

Nfld., P.E.I., N.B.:—Purchase films but do not produce them  
N.S., Que., Alta., B.C.:—Produce educational or informational films  
Ont.:—Dept. of Tourism and Information, Theatres Branch and Photography Branch (Films are available to the public from several other departments.)  
Man.:—Dept. of Industry and Commerce  
Sask.:—Dept. of Industry and Commerce  
Dept. of Education, Visual Education Branch  
Alta.:—Dept. of Industry and Development, Photographic Branch  
B.C.:—Dept. of Recreation and Conservation  
(All provinces have Motion Picture Censorship Boards. Details available from: Depts. of Education and Travel, Provincial Censorship Boards and National Film Board Regional Offices.)



<u>Sources for Federal Data</u>	<u>Subject</u>	<u>Sources for Provincial Data</u>
Dominion Bureau of Statistics Governments Division Dept. of Finance (municipal grants) Dept. of Indian Affairs and Northern Development (Y.T. and N.W.T.)	MUNICIPAL AFFAIRS	Nfld.:—Dept. of Municipal Affairs and Supply P.E.I., N.S., N.B., Que., Ont., Man., Sask., Alta., B.C.:—Depts. of Municipal Affairs
National Gallery of Canada (works of art) Dept. of Secretary of State Canadian War Museum National Aviation Museum National Museum of Canada Laurier House, Ottawa (historical) National Historic Parks Museums Public Archives (historical) Queen's Printer (agent for UNESCO publications)	MUSEUMS	Nfld.:—Dept. of Provincial Affairs N.S.:—Nova Scotia Museum of Fine Arts, Public Archives of Nova Scotia, Provincial Museum of Nova Scotia, Halifax N.B.:—New Brunswick Museum, Saint John Que.:—The Archives, Musée de la Province de Québec, Quebec Commercial and Industrial Museum of Montreal Dept. of Cultural Affairs Ont.:—Royal Ontario Museum, Art and Archaeology, Life Sciences and Earth Sciences Divisions Dept. of Public Records and Archives Man.:—Manitoba Museum, Winnipeg Sask.:—Provincial Museum, Regina Western Development Museum, Saskatoon Alta.:—Dept. of Provincial Secretary, Provincial Museum, Edmonton B.C.:—Provincial Museum of Natural History and Anthropology, Provincial Archives (including Helmcken House), Victoria Also provincial universities of Sask., Alta. and B.C.
Comptroller of the Treasury (government accounts) Dominion Bureau of Statistics	NATIONAL ACCOUNTS	
Dept. of Transport Marine Services (aids to marine navigation; secondary canals) Telecommunications Branch (radio aids to navigation) Information Services Canada Transport Commission Dept. of Energy, Mines and Resources Canadian Hydrographic Service Legal Surveys and Aeronautical Charts Division Dept. of Public Works Operations Directorate National Harbours Board National Research Council Radio and Electrical Engineering Division (applications of radar to navigation) Division of Mechanical Engineering (model-testing basin and hydraulic models) St. Lawrence Seaway Authority (St. Lawrence-Great Lakes canals)	NAVIGATION	

Sources for Federal Data	Subject	Sources for Provincial Data
<p>Dept. of National Health and Welfare Nutrition Division Dept. of Agriculture Consumer Service Dept. of Fisheries Information and Consumer Service Dept. of Industry Food Products Branch Queen's Printer (agent for FAO and WHO publications)</p>	NUTRITION	<p>Nfld., P.E.I., N.B., Que.:—Depts. of Health N.S.:—Dept. of Public Health Ont.:—Dept. of Health Dept. of Agriculture and Food, Home Economics Service Man.:—Dept. of Health, Health Education Branch Sask.:—Dept. of Public Health, Nutrition Division Alta.:—Dept. of Agriculture, Nutritionist Dept. of Public Health B.C.:—Dept. of Health Services and Hospital Insurance</p>
<p>Dept. of Energy, Mines and Resources Marine Sciences Branch Dept. of Fisheries Dept. of National Defence Defence Research Board Fisheries Research Board</p>	OCEANOGRAPHY	<p>Nfld.:—Dept. of Mines, Agriculture and Resources Que.:—Dept. of Tourism, Game and Fish Marine Biological Station of Grande Rivière Fisheries Training School B.C.:—Institute of Oceanography, University of British Columbia</p>
<p>Dept. of Energy, Mines and Resources Geological Survey of Canada Mineral Economics Division Mines Branch Dept. of Indian Affairs and Northern Development Northern Administration Branch (Y.T. and N.W.T.) Indian Affairs Branch (Indian reserves) Resource and Economic Development Group Dept. of Industry Chemicals Branch Dept. of Trade and Commerce Industrial Materials Branch National Energy Board Dominion Bureau of Statistics</p>	OIL AND NATURAL GAS	<p>Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S.:—Dept. of Mines N.B.:—Dept. of Lands and Mines Que.:—Electricity and Gas Board Ont.:—Dept. of Energy and Resources Management Man.:—Dept. of Mines and Natural Resources, Mines Branch Sask.:—Dept. of Mineral Resources Saskatchewan Power Corporation Dept. of Industry and Commerce Alta.:—Dept. of Mines and Minerals, Oil and Gas Conservation Board, Calgary Alberta Bureau of Statistics B.C.:—Dept. of Mines and Petroleum Resources</p>
<p>Dept. of National Health and Welfare Dept. of Indian Affairs and Northern Development Northern Administration Branch (Y.T. and N.W.T.) Dept. of Labour Civilian Rehabilitation Branch (employment of older workers) Dept. of Veterans Affairs (veterans only)</p>	<p>OLD AGE ASSISTANCE</p> <p>See also "Veterans Affairs"</p>	<p>Nfld.:—Dept. of Public Welfare P.E.I.:—Dept. of Welfare N.S., B.C.:—Old Age Assistance Boards N.B.:—Dept. of Youth and Welfare, Old Age and Blind Assistance Board Que.:—Dept. of Family and Social Welfare, Social Allowances Commission Ont.:—Dept. of Public Welfare, Welfare Allowances Branch Man.:—The Old Age Assistance and Blind Persons' Allowances Board Sask.:—Dept. of Welfare, Director of Public Assistance Alta.:—Dept. of Public Welfare, Pensions Board</p>
<p>Dept. of National Health and Welfare</p>	OLD AGE SECURITY	

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Indian Affairs and Northern Development National and Historic Parks Branch Dept. of Public Works Operations Directorate Planning Directorate National Capital Commission National Film Board	PARKS	Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I.:—Dept. of Tourist Development N.S., Alta.:—Depts. of Lands and Forests N.B.:—Dept. of Lands and Mines Que.:—Dept. of Tourism, Game and Fish Ont.:—Dept. of Lands and Forests, Parks Branch Dept. of Energy and Resources Management, Conservation Branch Man.:—Dept. of Mines and Natural Resources, Forestry Branch Dept. of Tourism and Recreation Sask.:—Dept. of Natural Resources B.C.:—Dept. of Recreation and Conservation
The Senate The House of Commons Library of Parliament Privy Council Office	PARLIAMENT	Nfld.:—Dept. of Provincial Affairs P.E.I., N.B., Sask., Alta., B.C.:—Legislative Assemblies N.S.:—House of Assembly Que.:—Legislative Council Legislative Assembly Ont.:—Legislative Assembly Clerk of the Legislative Assembly Man.:—Legislative Council
Dept. of Registrar General Patent and Copyright Office Trade Marks Office Canadian Patents and Development Limited (licences available on patents from Government laboratories, etc.) National Library (handles all copyright books)	PATENTS, COPYRIGHTS AND TRADE MARKS	
Dept. of National Health and Welfare Canada Pension Plan Dept. of Labour (re private pension plans) Dept. of National Revenue Dominion Bureau of Statistics (private pension plan statistics)	PENSIONS	All Provinces except Que.:—Legislation governing private pension plans Que.:—Quebec Pension Plan
National Film Board Canadian Broadcasting Corporation Information Services (radio and TV program photos) Central Mortgage and Housing Corporation Dept. of Energy, Mines and Resources Public Relations and Information Services Mineral Economics Division National Air Photographic Library Dept. of Forestry and Rural Development Information and Technical Services Division Dept. of Indian Affairs and Northern Development Information Services Division Canadian Government Travel Bureau National Capital Commission Information and Historical Division (related to the Development of the National Capital) Public Archives (historical)	PHOTOGRAPHIC MATERIAL  See also "Motion Pictures" and "Tourist Trade"	N.S.:—Dept. of Trade and Industry Man., Sask.:—Dept. of Industry and Commerce B.C.:—Dept. of Recreation and Conservation, Photographic Branch  (Photographs are available from many provincial government departments in all provinces.)



Sources for Federal Data	Subject	Sources for Provincial Data
<p>Dominion Bureau of Statistics (for all census and estimated population statistics)</p> <p>Dept. of Indian Affairs and Northern Development</p> <p>Northern Administration Branch (Eskimos)</p> <p>Indian Affairs Branch</p> <p>Public Archives (early census and settlement records)</p>	POPULATION	<p>Nfld.:—Dept. of Health</p> <p>P.E.I.:—Travel Bureau</p> <p>N.S.:—Dept. of Public Health, Vital Statistics Branch</p> <p>N.B.:—Dept. of Health, Vital Statistics Branch</p> <p>Que.:—Dept. of Health, Vital Statistics Branch</p> <p>Dept. of Industry and Commerce, Bureau of Statistics</p> <p>Ont.:—Dept. of Economics and Development, Office of the Chief Economist</p> <p>Man.:—Dept. of Industry and Commerce</p> <p>Dept. of Municipal Affairs</p> <p>Treasury Dept., Economic Research Branch</p> <p>Sask.:—Dept. of Public Health, Vital Statistics Branch</p> <p>Legislative Library</p> <p>Alta.:—Dept. of Industry and Development, Provincial Statistician</p> <p>B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics</p>
<p>Post Office Department</p> <p>Information and Public Relations (general postal information)</p> <p>Accounting Branch (money orders, savings bank, philatelic services, etc.)</p> <p>Postal Rates and Classification Branch (postage rates, etc.)</p>	POSTAL SERVICE	
<p>Dept. of Agriculture</p> <p>Production and Marketing Branch</p> <p>Poultry Division</p> <p>Health of Animals Branch</p> <p>Contagious Diseases Division</p> <p>Meat Inspection Division</p> <p>Animal Pathology Division</p> <p>Research Branch</p> <p>Animal Research Institute</p> <p>Dept. of Industry</p> <p>Food Products Branch</p> <p>Queen's Printer (agent for FAO publications)</p> <p>Dominion Bureau of Statistics</p>	POULTRY	<p>Nfld.:—Dept. of Mines, Agriculture and Resources</p> <p>P.E.I., N.S.:—Depts. of Agriculture</p> <p>N.B., Alta., B.C.:—Depts. of Agriculture, Poultry Branches</p> <p>Que.:—Dept. of Agriculture and Colonization, Animal Production Service</p> <p>Dept. of Industry and Commerce, Bureau of Statistics</p> <p>Ont.:—Ontario Agricultural College (Guelph), Poultry Division</p> <p>Man.:—Dept. of Agriculture and Conservation, Extension Service</p> <p>Sask.:—Dept. of Agriculture, Animal Industry Branch</p>
<p>Dept. of Secretary of State</p> <p>Secretariat Branch</p>	PRECEDENCE AND CEREMONIAL	<p>Nfld.:—Dept. of Provincial Affairs</p> <p>P.E.I., N.S., Ont., B.C.:—Depts. of Provincial Secretary</p> <p>Que.:—Executive Council, Chief of Protocol</p> <p>Man., Alta.:—Depts. of Provincial Secretary, Clerk of the Executive Council</p>
<p>Dominion Bureau of Statistics</p> <p>Dept. of Agriculture</p> <p>Production and Marketing Branch</p> <p>Agricultural Stabilization Board</p> <p>Markets Information</p> <p>Fisheries Prices Support Board</p> <p>Queen's Printer (agent for GATT publications)</p>	PRICES	<p>Ont.:—Dept. of Economics and Development, Office of the Chief Economist</p> <p>Man.:—Dept. of Industry and Commerce</p> <p>Sask.:—Economic Advisory and Planning Board</p> <p>B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics</p>

<u>Sources for Federal Data</u>	<u>Subject</u>	<u>Sources for Provincial Data</u>
Dept. of Registrar General Registration Branch Public Archives (early records)	<b>PUBLIC DOCUMENTS</b> (Commissions of Appointment, Proclamations, Land Grants, etc.)	<i>Nfld.</i> :—Dept. of Provincial Affairs Dept. of Mines, Agriculture and Resources <i>P.E.I., N.S., N.B., Que., Ont., Man., Sask., B.C.</i> :—Depts. of Provincial Secretary
Dominion Bureau of Statistics	<b>PUBLIC UTILITIES</b> See also "Electric Power"	<i>Nfld., Alta.</i> :—Boards of Public Utilities Commissioners <i>P.E.I., B.C.</i> :—Public Utilities Commissions <i>N.S., N.B.</i> :—Boards of Commissioners Public Utilities <i>Que.</i> :—Public Service Board Quebec Hydro-Electric Commission <i>Ont.</i> :—Dept. of Energy and Resources Management The Hydro-Electric Power Commission of Ontario Ontario Telephone Service Commission Ontario Water Resources Commission Ontario Municipal Board <i>Man.</i> :—Dept. of Public Utilities <i>Sask.</i> :—Government Finance Office Saskatchewan Government Telephones Saskatchewan Power Corporation
Dept. of Public Works Operations Directorate Information Services Dept. of Labour Labour Standards Branch (fair wages) Dept. of Transport Marine and Air Services St. Lawrence Seaway Authority	<b>PUBLIC WORKS</b>	All Provinces:—Depts. of Public Works <i>Additional:—Ont.</i> :—The Hydro-Electric Power Commission of Ontario Ontario Water Resources Commission
Canadian Broadcasting Corporation Board of Broadcast Governors (regulations for operation of radio and TV stations and networks both public and private) Canadian Overseas Telecommunication Corporation Dept. of Industry Electrical and Electronics Branch Dept. of Transport Telecommunications Branch (all matters affecting licences and facilities) National Research Council Radio and Electrical Engineering Division (radio science and its application to industry)	<b>RADIO</b>	<i>Ont.</i> :—Ontario Provincial Police, Radio Communications Branch Ryerson Institute of Technology, Toronto, Radio Station CJRT—FM <i>Sask.</i> :—Dept. of Natural Resources, Communications Division <i>Alta.</i> :—Radio CKUA, Edmonton, operated by Alberta Government Telephones <i>B.C.</i> :—Dept. of Lands, Forests, and Water Resources, Radio Section
	<b>RAILWAYS</b> See "Transportation"	

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of Indian Affairs and Northern Development  
National and Historic Parks Branch  
Northern Administration Branch (Y.T. and N.W.T.)  
Dept. of Forestry and Rural Development  
Information and Technical Services Division  
Dept. of National Health and Welfare  
National Gallery of Canada  
National Film Board

RECREATION  
See also "Health"

Dept. of Veterans Affairs (veterans)  
Dept. of Indian Affairs and Northern Development  
Northern Administration Branch (Eskimos)  
Information Division (Indians)  
Dept. of Manpower and Immigration  
Vocational Rehabilitation Branch  
Dept. of National Health and Welfare  
Dept. of Solicitor General  
Canadian Penitentiary Service  
National Parole Board  
National Film Board

REHABILITATION  
(of persons)

Dept. of Energy, Mines and Resources  
Water Resources Branch  
Mineral Economics Division  
Dept. of Fisheries  
Resource Development Service  
Dept. of Forestry and Rural Development  
Information and Technical Services Division  
Dept. of Indian Affairs and Northern Development  
Northern Administration Branch (minerals, oil, gas in Y.T. and N.W.T.)  
Resource and Economic Development Group  
Dept. of Industry  
Area Development Agency

RESOURCE  
DEVELOPMENT

Nfld.:—Dept. of Provincial Affairs  
Dept. of Mines, Agriculture and Resources  
P.E.I., N.S., Que., Ont.:—Depts. of Education  
N.B.:—Dept. of Youth and Welfare  
Dept. of Natural Resources, Travel Bureau  
Man.:—Dept. of Tourism and Recreation  
Sask.:—Dept. of Industry and Commerce, Tourist Development Branch  
Dept. of Education  
Alta.:—Dept. of Provincial Secretary, Recreation and Cultural Development Branch  
B.C.:—Dept. of Recreation and Conservation

Nfld.:—Dept. of Health, Provincial Co-ordinator of Rehabilitation  
P.E.I.:—Dept. of Welfare  
N.S.:—Dept. of Public Health, Provincial Rehabilitation Co-ordinator  
N.B.:—Dept. of Health, Director and Co-ordinator of Rehabilitation  
Que.:—Dept. of Family and Social Welfare  
Dept. of Education, Service for the Vocational Rehabilitation of the Handicapped  
Dept. of Labour  
Ont.:—Dept. of Public Welfare, Provincial Co-ordinator of Vocational Rehabilitation  
Dept. of Health, Rehabilitation Division  
Dept. of Reform Institutions  
Man.:—Dept. of Health, Provincial Director of Rehabilitation Services  
Sask.:—Dept. of Welfare, Provincial Co-ordinator of Rehabilitation  
Alta.:—Dept. of Public Welfare, Provincial Co-ordinator of Rehabilitation  
B.C.:—Dept. of Health Services and Hospital Insurance, Rehabilitation Co-ordinator

Nfld.:—Dept. of Economic Development  
Dept. of Mines, Agriculture and Resources  
Dept. of Community and Social Development  
P.E.I.:—Dept. of Industry and Natural Resources  
N.S.:—Dept. of Trade and Industry  
N.B.:—Dept. of Finance and Industry  
Que.:—Depts. of Lands and Forests, Labour, Roads, Family and Social Welfare, Natural Resources, and Industry and Commerce  
Ont.:—Dept. of Economics and Development, Office of the Chief Economist  
Dept. of Energy and Resources Management  
Dept. of Lands and Forests  
Ontario—St. Lawrence Development Commission  
Dept. of Municipal Affairs, Community Planning Branch  
Ontario Northland Transportation Commission, North Bay



Sources for Federal Data

Fisheries Research Board  
Northern Canada Power Commission  
Queen's Printer (agency for OECD publications)

National Research Council  
Laboratory Divisions (biosciences, building research, pure and applied chemistry, mechanical engineering, aeronautical research, pure and applied physics, radiation biology, radio and electrical engineering)  
Regional Laboratories at Saskatoon, Sask., and Halifax, N.S.  
Science Secretariat, Privy Council Office, Ottawa  
Canadian Patents and Development Limited (licences available on patents derived from government research, etc.)  
Atomic Energy of Canada Limited, Chalk River, Ont.  
Dept. of Agriculture  
Research Branch (basic and applied research on all aspects of agriculture)  
Dept. of Energy, Mines and Resources  
Geological Survey of Canada  
Mines Branch  
Observatories Branch  
Geographical Branch  
Marine Sciences Branch  
Inland Waters Branch  
Dept. of Forestry and Rural Development  
Information and Technical Services Division  
Dept. of Indian Affairs and Northern Development  
National and Historic Parks Branch  
Northern Co-ordination and Research  
Canadian Wildlife Service  
Dept. of Industry  
Industrial Research Adviser  
Dept. of National Defence  
Defence Research Board  
Dept. of National Health and Welfare  
Dept. of Transport (aviation, radio, meteorology, navigation)  
Dept. of Veterans Affairs (medical research)  
Fisheries Research Board  
Medical Research Council (fellowships, associateships and grants-in-aid)  
National Gallery of Canada (conservation research laboratory)  
Queen's Printer (agency for International Atomic Energy Agency publications)

Subject

RESOURCE  
DEVELOPMENT—  
concluded

Sources for Provincial Data

Man.:—Dept. of Mines and Natural Resources  
Dept. of Industry and Commerce  
Manitoba Development Authority  
Sask.:—Dept. of Industry and Commerce, Resource Development Branch  
Alta.:—Dept. of Industry and Development  
B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

SCIENTIFIC  
RESEARCH

See also  
"Atomic  
Energy"

Nfld.:—Dept. of Economic Development  
P.E.I.:—Dept. of Industry and Natural Resources  
N.S.:—Nova Scotia Research Foundation  
N.B.:—Dept. of Finance and Industry  
Que.:—Dept. of Agriculture and Colonization  
Dept. of Natural Resources  
Dept. of Roads  
Ont.:—Ontario Research Foundation  
Dept. of Agriculture and Food  
Dept. of Lands and Forests  
Alcoholism and Drug Addiction Research Foundation of Ontario  
The Hydro-Electric Power Commission of Ontario  
Sheridan Park Research Community  
Man.:—Various Depts. such as Health and Mines and Natural Resources  
Manitoba Research Council  
Sask.:—Saskatchewan Research Council  
Alta.:—Alberta Research Council  
B.C.:—Dept. of Industrial Development, Trade, and Commerce, B.C. Research Council

SENATE  
See "Parliament"

Sources for Federal Data

Subject

Sources for Provincial Data

SOCIAL  
SECURITY  
See  
"Family  
Allowances"  
"Blindness  
Allowances"  
"Old Age  
Assistance"  
"Old Age  
Security"  
"Disabled Persons  
Allowances"  
"Labour"  
"Unemployment"  
"Veterans Affairs"  
"Economic and  
Social Research"

SOCIAL WELFARE  
See "Welfare"

Dept. of Trade and Commerce  
Standards Branch (for inquiries  
on electricity and gas inspection,  
weights and measures, precious  
metals marking, commodity  
standards and national trade  
mark matters)  
Canadian Government Specifications  
Board (specifications for pur-  
chasing)  
Canadian Standards Association  
Central Mortgage and Housing  
Corporation (building standards)  
Dept. of Labour  
Labour Standards Branch (fair  
wages, hours of work)  
Dept. of National Defence  
Dept. of Transport (standards in  
radio frequencies, standards in  
steamship inspection)  
National Research Council  
Applied Physics Division (funda-  
mental physical and electrical  
standards)  
Division of Building Research,  
Specifications Section

STANDARDS  
AND  
SPECIFICATIONS  
See also  
"Food and  
Drugs"

Ont.:—Dept. of Labour  
Ontario Research Foundation  
Ontario Housing Corporation

Dominion Bureau of Statistics  
Central Mortgage and Housing  
Corporation  
Dept. of National Health and Welfare  
Research and Statistics Directorate  
Queen's Printer (agent for United  
Nations publications)

STATISTICS

Nfld.:—Dept. of Provincial Affairs  
Dept. of Economic Development  
N.S.:—Dept. of Trade and Industry  
N.B.:—Dept. of Education  
Que.:—Dept. of Industry and Com-  
merce, Bureau of Statistics  
Ont.:—Dept. of Economics and De-  
velopment, Office of the Chief  
Economist  
Man.:—Dept. of Industry and  
Commerce, Business Research  
Branch  
Sask.:—Economic Development  
Board  
Alta.:—Dept. of Industry and De-  
velopment, Bureau of Statistics  
Dept. of Public Health, Vital  
Statistics  
B.C.:—Dept. of Industrial Develop-  
ment, Trade, and Commerce,  
Bureau of Economics and Statis-  
tics

<u>Sources for Federal Data</u>	<u>Subject</u>	<u>Sources for Provincial Data</u>
Dept. of National Revenue Taxation Division (income tax and estate tax statistics and information) Customs and Excise Division (customs duty, excise duty, excise tax and sales tax) Dept. of Finance (taxation policy, tariff policy, Budget papers and statistics)	<b>TAXATION</b>	Nfld., Que.:—Depts. of Finance P.E.I.:—Provincial Treasurer N.S.:—Dept. of Finance and Economics N.B.:—Dept. of Provincial Secretary Dept. of Finance and Industry Ont.:—Treasury Dept. Dept. of Economics and Development, Office of the Chief Economist Man., Sask.:—Provincial Treasury Depts. Alta.:—Provincial Treasurer's Dept. Dept. of Provincial Secretary Dept. of Municipal Affairs B.C.:—Dept. of Finance, Surveyor of Taxes
Board of Broadcast Governors Canadian Broadcasting Corporation Dept. of Industry Electrical and Electronics Branch Dept. of Transport Telecommunications Branch National Research Council National Film Board	<b>TELEVISION</b> <i>See also "Radio"</i>	
Dept. of Energy, Mines and Resources Topographical Survey National Research Council Applied Physics Division (photogrammetric research)	<b>TOPOGRAPHY</b>	Nfld.:—Dept. of Mines, Agriculture and Resources N.S.:—Dept. of Mines Nova Scotia Research Foundation N.B.:—Dept. of Lands and Mines Que.:—Dept. of Lands and Forests Dept. of Industry and Commerce, Drafting Division Dept. of Natural Resources Ont.:—Dept. of Lands and Forests, Lands and Surveys Branch Man.:—Dept. of Mines and Natural Resources, Surveys Branch Sask.:—Dept. of Natural Resources Alta., B.C.:—Depts. of Lands and Forests
Dept. of Trade and Commerce Canadian Government Travel Bureau Canadian Government Exhibition Commission (displays) Dept. of Indian Affairs and Northern Development Northwest Territories Tourist Office National and Historic Parks Branch National Gallery of Canada National Film Board Dominion Bureau of Statistics	<b>TOURIST TRADE</b>	Nfld.:—Dept. of Economic Development, Tourist Development Division P.E.I.:—Dept. of Tourist Development N.S.:—Dept. of Trade and Industry, Travel Bureau N.B.:—Dept. of Natural Resources, Travel Bureau Que.:—Dept. of Tourism, Game and Fish Ont.:—Dept. of Tourism and Information Man.:—Dept. of Tourism and Recreation Sask.:—Dept. of Industry and Commerce, Tourist Development Branch Alta.:—Dept. of Industry and Development, Alberta Travel Bureau B.C.:—Dept. of Recreation and Conservation, Travel Bureau



Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of Trade and Commerce  
Agriculture and Fisheries Branch  
Canadian Government Exhibition  
Commission  
Export Credits Insurance Cor-  
poration  
Industrial Materials Branch  
Manufacturing Industries and  
Engineering Branch  
Office of Commodity Trade Policy  
Office of Trade Relations  
Standards Branch (weights and  
measures)  
Trade Commissioner Service  
Trade Fairs and Missions Branch  
Trade Publicity Branch  
Trade Services Branch  
Dept. of Finance  
Economic Affairs Division (tariff  
policy)  
Dept. of Forestry and Rural Develop-  
ment  
Information and Technical Services  
Division  
Dept. of Industry  
Information Division  
Dept. of Registrar General  
Corporations Branch  
Queen's Printer (agent for OECD,  
Commonwealth Economic Com-  
mittee and GATT publications)  
National Film Board  
Dominion Bureau of Statistics

TRADE

For incorporation of companies under  
provincial law, address Provincial  
Secretaries except Nfld., where  
Dept. of Justice is the authority  
and B.C., where Attorney Gen-  
eral's Department is the authority.  
P.E.I.:—Dept. of Industry and  
Natural Resources  
N.S.:—Dept. of Trade and Industry  
N.B.:—Dept. of Finance and Industry  
Que., Man.:—Depts. of Industry  
and Commerce  
Ont.:—Dept. of Economics and  
Development, Trade and In-  
dustry Branch and Office of the  
Chief Economist  
Sask.:—Dept. of Industry and Com-  
merce, Area and Trade Develop-  
ment  
Alta.:—Dept. of Industry and De-  
velopment  
B.C.:—Dept. of Industrial Develop-  
ment, Trade, and Commerce

Dept. of the Secretary of State  
Bureau for Translations  
National Research Council  
National Science Library (infor-  
mation re location of completed  
scientific translations in Canada,  
other countries of the Common-  
wealth and the United States)

TRANSLATIONS

Que.:—Legislative Assembly Bureau  
for Translations and all depart-  
ments of the provincial adminis-  
tration.

Dept. of Transport  
Information Services  
Air Canada  
Canada Transport Commission (reg-  
ulations re railways: highway  
crossings; rates of railways,  
express companies and certain  
inland water carriers; rates re  
communications, international  
bridges and tunnels; licences to  
certain inland carriers; com-  
mercial air services)  
Canadian National Railways  
Dept. of Indian Affairs and Northern  
Development  
Northern Administration Branch  
National and Historic Parks  
Branch (highways in National  
Parks)  
Dept. of Industry  
Mechanical Transport Branch  
Dept. of Public Works  
Operations Directorate  
Dept. of Trade and Commerce  
Trade Services Branch  
National Harbours Board  
Northern Transportation Company  
Limited (Crown)  
Queen's Printer (agent for ICAO  
publications)  
St. Lawrence Seaway Authority  
National Film Board  
Dominion Bureau of Statistics

TRANS-  
PORTATION

Nfld., N.S.:—Depts. of Highways  
P.E.I.:—Dept. of Public Works  
N.B.:—Dept. of Public Works,  
Highways Branch  
Que.:—Dept. of Transportation and  
Communications  
Dept. of Roads  
Ont.:—Dept. of Transport  
Dept. of Highways  
Dept. of Economics and Develop-  
ment, Office of the Chief  
Economist  
Ontario Northland Transportation  
Commission, North Bay  
Man.:—Dept. of Public Works,  
Highways Branch  
Manitoba Transportation Com-  
mission  
Dept. of Public Utilities  
Dept. of Industry and Commerce  
Sask.:—Dept. of Highways and  
Transportation  
Saskatchewan Transportation  
Company  
Economic Development Board  
Alta.:—Dept. of Highways  
Highway Traffic Board  
Alberta Freight Bureau  
B.C.:—Dept. of Commercial Trans-  
port  
Dept. of Highways

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Indian Affairs and Northern Development Northern Administration Branch (Y.T. and N.W.T.) National and Historic Parks Branch Dominion Bureau of Statistics	<b>TRAPPING</b> See also <b>"Fur Farming"</b>	Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S., Ont., Alta.:—Depts. of Lands and Forests N.B.:—Dept. of Lands and Mines Que.:—Dept. of Tourism, Game and Fish Man.:—Dept. of Mines and Natural Resources, Game Branch Sask.:—Dept. of Natural Resources, Fur Marketing Service B.C.:—Dept. of Recreation and Conservation
Dept. of Labour Economics and Research Branch Queen's Printer (agent for ILO publications) Unemployment Insurance Commission Dominion Bureau of Statistics	<b>UNEMPLOYMENT</b>	Nfld., N.S., Que., Sask., Alta.:—Depts. of Labour N.B.:—Office of the Economic Advisor Ont.:—Dept. of Economics and Development, Office of the Chief Economist Dept. of Public Welfare Man.:—Dept. of Labour, Research Branch B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics Dept. of Labour
Unemployment Insurance Commission Dept. of Indian Affairs and Northern Development Northern Administration Branch (Y.T. and N.W.T.) Dept. of Manpower and Immigration Canada Manpower Division (winter works program, vocational training) Dept. of National Health and Welfare	<b>UNEMPLOYMENT ASSISTANCE</b>	Nfld., N.S., Ont., Alta.:—Depts. of Public Welfare P.E.I., Man., Sask.:—Depts. of Welfare N.B.:—Dept. of Youth and Welfare Que.:—Dept. of Family and Social Welfare B.C.:—Dept. of Social Welfare
Central Mortgage and Housing Corporation National Capital Commission	<b>URBAN RENEWAL</b>	Nfld., N.S., Que., Alta., B.C.:—Depts. of Municipal Affairs Ont.:—Ontario Housing Corporation Man.:—Dept. of Municipal Affairs, Municipal Affairs Branch Manitoba Housing Commission
Dept. of Veterans Affairs (general information, rehabilitation, welfare, allowances, training, treatment, land settlement, education of children of war dead, insurance, records of service, war graves and medals) Canadian Pension Commission (the Pension Act and Civilian War Pensions and Allowances Act, Parts I to X) Dept. of Finance (veterans business and professional loans) Dept. of Indian Affairs and Northern Development Indian Affairs Branch (Indian veterans) Dept. of Manpower and Immigration (vocational training) War Veterans Allowance Board (the War Veterans Allowance Act and Civilian War Pensions and Allowances Act, Part XI)	<b>VETERANS AFFAIRS</b>	P.E.I., Man.:—Depts. of Welfare N.S.:—Dept. of Public Welfare N.B.:—Dept. of Youth and Welfare Que.:—Dept. of Family and Social Welfare Ont.:—Dept. of Public Welfare, Soldiers Aid Commission Sask.:—Dept. of Welfare, Rehabilitation Division B.C.:—Dept. of Provincial Secretary

Sources for Federal Data

Subject

Sources for Provincial Data

Dominion Bureau of Statistics  
Dept. of Indian Affairs and Northern Development  
Northern Administration Branch (Y.T. and N.W.T.)  
Information Division (Indians)  
Dept. of Manpower and Immigration  
Canada Immigration Division  
Public Archives (early census records)

**VITAL  
STATISTICS**

Nfld., N.B., Que.:—Depts. of Health  
P.E.I.:—Dept. of Health, Director of Vital Statistics  
N.S.:—Dept. of Public Health, Registrar General  
Ont.:—Dept. of Provincial Secretary and Citizenship, Office of the Registrar-General  
Man.:—Dept. of Health, Vital Statistics Division  
Sask.:—Dept. of Public Health, Vital Statistics Branch  
Alta.:—Dept. of Public Health, Director of Vital Statistics  
B.C.:—Dept. of Health Services and Hospital Insurance, Vital Statistics Division

Dept. of Energy, Mines and Resources  
Water Resources Branch  
Inland Waters Branch  
Dept. of Agriculture  
Prairie Farm Rehabilitation Administration  
Dept. of Fisheries  
Conservation and Development Service  
Dept. of Forestry and Rural Development  
Information and Technical Services Division  
National Film Board

**WATER  
RESOURCES**

Nfld.:—Dept. of Mines, Agriculture and Resources  
N.S.:—Nova Scotia Water Authority  
N.B.:—Dept. of Lands and Mines  
Que.:—Dept. of Natural Resources  
Ont.:—Ontario Water Resources Commission  
Dept. of Lands and Forests  
Man.:—Dept. of Agriculture and Conservation, Water Control Branch  
Sask.:—Saskatchewan Water Resources Commission  
Dept. of Agriculture  
Alta.:—Dept. of Agriculture  
B.C.:—Dept. of Lands, Forests and Water Resources

Dept. of National Health and Welfare  
Dept. of Indian Affairs and Northern Development  
Northern Administration Branch (for Eskimos)  
Indian Affairs Branch  
National Advisory Committee on the Rehabilitation of Disabled Persons  
Unemployment Insurance Commission  
Yukon Territorial Council, Whitehorse  
National Film Board  
Dominion Bureau of Statistics

**WELFARE  
For Welfare of  
Veterans see  
"Veterans Affairs"**

Nfld., N.S., Ont., Alta.:—Depts. of Public Welfare  
P.E.I., Man., Sask.:—Depts. of Welfare  
N.B.:—Dept. of Youth and Welfare  
Que.:—Dept. of Family and Social Welfare  
B.C.:—Dept. of Social Welfare

Dept. of Indian Affairs and Northern Development  
Canadian Wildlife Service  
Commissioner of Yukon Territory, Whitehorse  
Dept. of Fisheries  
Information and Consumer Service  
National Film Board

**WILDLIFE**

Nfld.:—Dept. of Mines, Agriculture and Resources  
P.E.I.:—Dept. of Industry and Natural Resources  
N.S., Ont., Alta.:—Depts. of Lands and Forests  
N.B.:—Dept. of Lands and Mines  
Que.:—Dept. of Tourism, Game and Fish  
Man.:—Dept. of Mines and Natural Resources  
Sask.:—Dept. of Natural Resources, Wildlife Branch  
B.C.:—Dept. of Recreation and Conservation



## PART II.—SPECIAL MATERIAL PUBLISHED IN FORMER EDITIONS OF THE CANADA YEAR BOOK

It is not possible to include in any single edition of the Year Book all articles and descriptive text of previous editions. Therefore the following list has been compiled as an index to such miscellaneous material and special articles as are not repeated in the present edition. This list links up the Year Book with its predecessors in respect of matters that have not been subject to wide change. Those Sections of Chapters, such as "Population", which are automatically revived when later census material is made available and to which adequate references are made in the text, are not listed unless they are in the nature of special contributions. The latest published article on each subject is shown, except when an earlier article includes material not repeated in the later one. When an article covers more than one subject it is listed under each appropriate heading.

The articles marked with an asterisk (\*) are available in reprint form from the Information Division, Dominion Bureau of Statistics.

Subject and Article	Contributor	Edition	Page
<b>Agriculture—</b>			
Historical Background of Canadian Agriculture.....	G. S. H. BARTON.....	1939	187-190
The Major Soil Zones and Regions of Canada	P. C. STOBBE.....	1951	352-356
The Board of Grain Commissioners.....	W. J. MACLEOD.....	1960	957-958
The Canadian Wheat Board and its Role in Grain Marketing.....	C. B. DAVIDSON.....	1960	958-960
Changes in Canadian Agriculture as Reflected by the Census of 1961.....	—	1963-64	409-415
Agriculture in the Canadian Economy, 1964..	—	1965	440-446
Contribution of the Canada Department of Agriculture to Modern Agricultural Science	—	1966	457-461
<b>Art, Literature and the Press—</b>			
*The Democratic Functioning of the Press....	W. A. BUCHANAN.....	1945	744-748
Report of the Royal Commission on National Development in the Arts, Letters and Sciences.....	—	1952-53	342-345
A History of Canadian Journalism, 1752- (circa) 1900.....	W. H. KESTERTON.....	1957-58	920-934
A History of Canadian Journalism (circa) 1900-1958.....	W. H. KESTERTON.....	1959	883-902
<b>Banking and Finance—</b>			
The Bank of Canada and its Relation to the Financial System.....	—	1937	881-885
Historical Sketch of Currency and Banking..	—	1938	900-906
The Royal Canadian Mint.....	H. E. EWART.....	1940	888-892
Wartime Control under the Foreign Exchange Control Board.....	R. H. TARR.....	1941 1942	833-835 830-833
Post-War Financial Policy.....	—	1954	1061-1064
Commercial Banking in Canada.....	J. DOUGLAS GIBSON.....	1961	1115-1120
<b>Citizenship—</b>			
Early Naturalization Procedure and Events Leading up to the Canadian Citizenship Act.....	—	1951	153-155
<b>Climate and Meteorology—</b>			
Factors which Control Canadian Weather...	SIR FREDERICK STUPART...	1925	36-40
Temperature and Precipitation of Northern Canada.....	A. J. CONNOR.....	1930	41-56
Droughts in Western Canada.....	A. J. CONNOR.....	1933	47-59

Subject and Article	Contributor	Edition	Page
<b>Climate and Meteorology</b> —concluded			
The Climate of Canada (textual material appears in the 1959 Year Book and the tabular data in the 1960 edition but the reprint includes both textual and tabular data).....	C. C. BOUGHNER and M. K. THOMAS.....	1959 1960	23-51 31-77
<b>Communications</b> —			
*The Democratic Functioning of the Press....	W. A. BUCHANAN.....	1945	744-748
*History and Development of the Canadian Broadcasting Corporation.....	AUGUSTIN FRIGON.....	1947	737-740
A History of Canadian Journalism, 1752- (circa) 1900.....	W. H. KESTERTON.....	1957-58	920-934
A History of Canadian Journalism (circa) 1900-1953.....	W. H. KESTERTON.....	1959	883-902
<b>Constitution and Government</b> —			
Provincial and Local Government.....	—	1922-23	102-115
The Evolution of the Constitution of Canada down to Confederation.....	S. A. CUDMORE and E. H. COLEMAN.....	1942 1942	34-40 40-59
The British North America Act, 1867.....	F. H. SOWARD.....	1945	74-79
Canada's Growth in External Status.....	—	1950	85-92
The Constitutional Development of Newfoundland prior to Union with Canada, 1949	—	1951	56-57
The Terms of Union of Newfoundland with Canada, 1949.....	—	1956	101-107
Financial Administration of the Government of Canada.....	W. E. D. HALLIDAY.....	1956	62-70
*The Privy Council Office and Cabinet Secretariat in Relation to the Development of Cabinet Government.....	J. R. MALLORY.....	1961	51-57
*Amendment of the Canadian Constitution...			
<b>Crime and Delinquency</b> —			
A Historical Sketch of Criminal Law and Procedure.....	R. E. WATTS.....	1932	897-899
The Influence of the Royal Canadian Mounted Police in the Building of Canada.....	S. T. WOOD.....	1950	317-331
The Philosophy of the Royal Canadian Mounted Police.....	—	1957-58	332-334
<b>Education</b> —			
Report of the Royal Commission on National Development in the Arts, Letters and Sciences.....	—	1952-53	342-345
Recent Developments in Public Technical and Vocational Education in Canada.....	PHILLIP COHEN.....	1963-64	737-743
<b>Fauna and Flora</b> —			
Faunas of Canada.....	P. A. TAVERNER.....	1922-23	32-36
Faunas of Canada.....	R. M. ANDERSON.....	1937	29-52
Migratory Bird Protection in Canada.....	—	1951	38-43
*The Barren-Ground Caribou.....	—	1954	33-36
Migratory Bird Legislation.....	—	1955	41-45
The Musk-ox.....	—	1957-58	28-30
Provincial Government Wildlife Conservation Measures.....	—	1963-64	46-52
*The Flora of Canada.....	HOMER J. SCOGGAN.....	1966	35-61
<b>Fisheries</b> —			
Groundfish Species in the Canadian Fisheries	T. H. TURNER.....	1957-58	591-595
The Fisheries Research Board.....	J. L. KASK.....	1959	584-588

Subject and Article	Contributor	Edition	Page
<b>Fisheries—concluded</b>			
Canada's Commercial Fishery Resources and Their Conservation.....	—	1960	625-630
The Fisheries Research Board of Canada....	—	1963-64	612-614
<b>Forestry—</b>			
Physiography, Geology and Climate as Affecting the Forests.....	—	1934-35	311-313
The Pulp and Paper Industry in Canada.....	—	1952-53	467-475
The Federal-Provincial Forestry Agreements The Pulp and Paper Research Institute of Canada.....	H. W. BEALL.....	1956	459-466
Canadian Forest Products and Changing World Markets.....	RIELLE THOMSON.....	1957-58	489-491
	J. T. B. KINGSTON.....	1965	511-517
<b>Fur Trade—</b>			
The Development of Marshlands in Relation to Fur Production and the Rehabilitation of Fur-Bearers.....	D. J. ALLAN.....	1943-44	267-269
The Fur Industry.....	W. M. RITCHIE.....	1961	618-622
Provincial Government Wildlife Conservation Measures.....	—	1963-64	46-52
<b>Geology—</b>			
Geology in Relation to Agriculture.....	WYATT MALCOLM.....	1921	68-72
Geology and Economic Minerals.....	GEORGE HANSON.....	1942	3-14
The Geological Survey of Canada.....	J. M. HARRISON.....	1960	13-19
Geology of Canada.....	A. H. LANG.....	1961	1-14
<b>Health and Welfare—</b>			
Development of Public Health, Welfare and Social Security in Canada.....	G. F. DAVIDSON.....	1952-53	224-229
*Mental Health and Tuberculosis.....	B. R. BLISHEN and C. A. ROBERTS.....	1956	248-257
Hospital Services and Hospital Insurance in Canada.....	—	1960	281-290
*Federal Food and Drug Legislation in Canada	C. A. MORRELL.....	1961	242-248
Social Welfare Expenditures in Canada.....	J. W. WILLARD.....	1962	217-222
<b>History—</b>			
*Canadian Chronology, 1497-1960.....	—	1951-60	...
Canadian Chronology, 1961-64.....	—	1962-65	...
(up-dated annually in subsequent editions)			
<b>Insurance—</b>			
Fire and Casualty Insurance.....	G. D. FINLAYSON.....	1942	842-846
Insurance in Canada during the Depression and War Periods.....	G. D. FINLAYSON.....	1947	1064-1074
Life Insurance.....	RICHARD HUMPHREYS.....	1963-64	1071-1077
<b>Labour—</b>			
History of the Labour Movement in Canada.	EUGENE FORSEY.....	1957-58	795-802
Recent Developments in Public Technical and Vocational Education in Canada.....	PHILLIP COHEN.....	1963-64	737-743
<b>Manufactures—</b>			
Changes in Canadian Manufacturing Production from Peace to War, 1939-44.....	—	1945	364-381
Canadian Metallurgical Development.....	JOHN CONVEY.....	1961	513-522
Manufacturing Production during the Period 1945-59.....	A. COHEN.....	1962	600-609
The Petrochemical Industry in Canada.....	G. E. McCORMACK.....	1962	609-615
*Secondary Manufacturing in Canada.....	W. L. POSTHUMUS.....	1963-64	637-643



Subject and Article	Contributor	Edition	Page
<b>Mining—</b>			
Mining—A Historical Sketch.....	—	1939	309-310
Geology and Economic Minerals.....	GEORGE HANSON.....	1942	3-14
The Coal Deposits and Coal Resources of Canada.....	B. R. MACKAY.....	1946	337-347
Canadian Crude Petroleum Situation.....	G. S. HUME.....	1952-53	524-527
History of Pipeline Construction in Canada..	G. S. HUME.....	1954	540-544
Canadian Metallurgical Development.....	G. S. HUME.....	1954	861-869
	JOHN CONVEY.....	1961	513-522
<b>Physiography and Related Sciences—</b>			
Physical Geography of the Canadian Eastern Arctic.....	R. A. GIBSON.....	1945	12-19
Hydrographical Features.....	F. C. G. SMITH.....	1947	3-12
Physical Geography of the Canadian Western Arctic.....	R. A. GIBSON.....	1948-49	9-18
Geology of Canada.....	A. H. LANG.....	1961	1-14
The Drainage Basins of Canada.....	—	1961	16-18
Economic Regions of Canada.....	N. L. NICHOLSON.....	1962	17-23
*Main Physical and Economic Features of the Provinces and Territories.....	—	1963-64	4-20
Geophysics.....	G. S. GARLAND.....	1963-64	57-60
Federal Government Surveying and Mapping	MARY J. GIROUX.....	1965	17-24
*Astronomy in Canada.....	IAN HALLIDAY.....	1965	47-55
<b>Population—</b>			
Occupational Trends in Canada, 1891-1931...	A. H. LENEVEU.....	1939	774-778
*Developments in Canadian Immigration.....	—	1957-58	154-176
Integration of Postwar Immigrants.....	—	1959	176-178
*Native Peoples of Canada.....	—	1960	201-210
Use of the English and French Languages in Canada.....	A. H. LENEVEU.....	1965	180-184
Mobility of Canada's Population, 1956-1961..	(Miss) Y. KASAHARA.....	1966	179-187
<b>Research—</b>			
*The International Geophysical Year.....	D. C. ROSE.....	1957-58	35-38
The Fisheries Research Board.....	J. L. KASK.....	1959	584-588
Geophysics.....	G. S. GARLAND.....	1963-64	57-60
The Fisheries Research Board of Canada....	—	1963-64	612-614
Astronomy in Canada.....	IAN HALLIDAY.....	1965	47-55
A Selection of Canadian Achievements in Science and Technology, 1800-1964.....	JOHN R. KOHR.....	1965	398-401
<b>Trade, Domestic—</b>			
The Board of Grain Commissioners.....	W. J. MACLEOD.....	1960	957-958
The Canadian Wheat Board and its Role in Grain Marketing.....	C. B. DAVIDSON.....	1960	958-960
<b>Transportation—</b>			
The Development of Aviation in Canada....	J. A. WILSON.....	1938	710-712
Pre-War Civil Aviation and the Defence Program.....	J. A. WILSON.....	1941	608-612
The Wartime Role of the Steam Railways of Canada.....	C. P. EDWARDS.....	1945	648-651
International Civil Aviation Organization and Canada's Participation Therein.....	C. S. BOOTH.....	1952-53	820-827
Canals of the St. Lawrence Waterway.....	—	1954	830-833
History of the Canadian National Railways..	—	1955	840-851
The St. Lawrence Seaway.....	—	1955	885-888
Traffic on the Great Lakes - St. Lawrence Seaway.....	—	1956	821-829
The St. Lawrence Seaway in Operation.....	S. JUDEK.....	1960	851-860
Revolution in Canadian Transportation.....	A. W. CURRIE.....	1962	753-758
Operational and Technological Changes in Rail Transport.....	—	1965	755-761

### PART III.—REGISTER OF OFFICIAL APPOINTMENTS\*

The following list includes official appointments for the period Jan. 1, 1966 to Jan. 31, 1967,† continuing the list published in the 1966 Year Book at pp. 1143-1149. Appointments to the Governor General's Staff, judicial appointments, appointments to advisory councils and appointments of limited or local importance are not included.

**Queen's Privy Council for Canada.—1966.** *Feb. 22*, Hon. Maurice Bourget, Lévis, Que.: to be a member.

**Lieutenant-Governor.—1966.** *Feb. 22*, Hon. Hugues Lapointe: to be Lieutenant-Governor in and for the Province of Quebec.

**Cabinet Appointments.—1966.** *Jan. 4*, Hon. Robert Henry Winters: to be Minister of Trade and Commerce. *Sept. 29*, Hon. Arthur Laing: to be Minister of Indian Affairs and Northern Development. Hon. Guy Favreau: to be Registrar General of Canada. Hon. Maurice Sauvé: to be Minister of Forestry and Rural Development. Hon. Edgar John Benson: to be President of the Treasury Board. Hon. Lawrence T. Pennell: to be Solicitor General of Canada. Hon. Jean-Luc Pépin: to be Minister of Energy, Mines and Resources. Hon. Jean Marchand: to be Minister of Manpower and Immigration. **1967.** *Jan. 9*, Hon. Walter Lockhart Gordon: to be a Member of the Administration.

**Senate Appointments.—1966.** *Jan. 7*, Hon. Sydney John Smith, a member: to be Speaker. *Feb. 24*, Earl Adam Hastings, Calgary, Alta.: to be a Senator for the Province of Alberta. Hon. Jean-Paul Deschatelets, Montreal, Que.: to be a Senator for the Province of Quebec. John Lang Nichol, Vancouver, B.C.: to be a Senator for the Province of British Columbia. Norman Archibald MacRae MacKenzie, Vancouver, B.C.: to be a Senator for the Province of British Columbia. Hon. Harry William Hays, Calgary, Alta.: to be a Senator for the Province of Alberta. James Harper Prowse, Edmonton, Alta.: to be a Senator for the Province of Alberta. Hazen Robert Argue, Kayville, Sask.: to be a Senator for the Province of Saskatchewan. Earl Wallace Urquhart, West Bay, N.S.: to be a Senator for the Province of Nova Scotia. Douglas Keith Davey, Toronto, Ont.: to be a Senator for the Province of Ontario. *July 8*, Chesley William Carter, St. John's, Nfld.: to be a Senator for the Province of Newfoundland. James Duggan, St. John's, Nfld.: to be a Senator for the Province of Newfoundland. Hon. Alan Aylesworth Macnaughton, Westmount, Que.: to be a Senator for the Province of Quebec. J. G. Léopold Langlois, Quebec, Que.: to be a Senator for the Province of Quebec. Paul Desruisseaux, Sherbrooke, Que.: to be a Senator for the Province of Quebec. Thomas Joseph Kichham, Souris, P.E.I.: to be a Senator for the Province of Prince Edward Island. *Nov. 8*, Douglas Donald Everett, Winnipeg, Man.: to be a Senator for the Province of Manitoba.

**Parliamentary Secretaries.—1966.** *Jan. 9*, John Matheson and Pierre Elliot Trudeau: to the Prime Minister. Jack Davis: to the Minister of Energy, Mines and Resources. J. J. Jean Chrétien: to the Minister of Finance. Albert Bécharde: to the Secretary of State. Charles R. M. Granger: to the Minister of Fisheries. Margaret Rideout: to the Minister of National Health and Welfare. James E. Walker: to the Minister of National Revenue. James A. Byrne: to the Minister of Transport. Jean-Charles Cantin: to the Minister of Trade and Commerce. Stanley Haidasz: to the Minister of Indian Affairs and Northern Development. Donald S. Macdonald: to the Secretary of State for External Affairs. Bryce S. Mackasey: to the Minister of Labour. John C. Munro: to

\* Extracts from the *Canada Gazette*, with some additions. All academic and honorary degrees and military honours have been omitted.

† See also Appendix I.

the Minister of Manpower and Immigration. John B. Stewart: to the Minister of Public Works and House Leader. Bruce S. Beer to continue as Parliamentary Secretary to the Minister of Agriculture.

**Deputy Ministers.—1966.** *Oct. 1*, Jean Miquelon: to be Deputy Registrar General of Canada. Tom Kent: to be Deputy Minister of Manpower and Immigration. Ernest-A. Côté: to be Deputy Minister of Indian Affairs and Northern Development. Claude Isbister: to be Deputy Minister of Energy, Mines and Resources. L.-Z. Rousseau: to be Deputy Minister of Forestry and Rural Development. Thomas Daniel MacDonald: to be Deputy Solicitor General. *Nov. 1*, David H. Sheppard: to be Deputy Minister of National Revenue for Taxation. **1967.** *Jan. 17*, S. B. Williams: to be Deputy Minister of Agriculture.

**Diplomatic Appointments.—1966.** The following diplomatic appointments were announced during the year. Richard Plant Bower: to be Canadian Ambassador to the Federal Republic of Germany. John Kennett Starnes: to be Canadian Ambassador to the United Arab Republic. Paul Tremblay: to be Canadian Ambassador to Belgium and Luxembourg. George Ignatieff: to be Canadian Ambassador to the United Nations. Lt.-Gen. Raymond Judson Reeves: to be Commander-in-Chief of NORAD from July 31, 1966. Alfred John Pick: to be first Canadian Ambassador to Tunisia. Herbert O. Moran: to be Canadian Ambassador to Japan and Korea. Ronald Macalister Macdonnell: to be High Commissioner for Canada in New Zealand. Charles Eustace McGaughey: to be High Commissioner for Canada in Pakistan. James Russell McKinney: to be High Commissioner for Canada in Trinidad and Tobago. Arthur John Hicks: to be Canadian Ambassador to Costa Rica, with concurrent accreditation to Panama, Nicaragua, Honduras and El Salvador. John Alexander McCordick: to be Canadian Ambassador to Austria. William George Marcel Olivier: to be Canadian Ambassador to Indonesia. Brigadier P. S. Cooper, seconded from Department of National Defence: to be Canadian Commissioner on the International Control Commission for Laos, *vice* K. W. MacLellan. C. S. A. Ritchie: to be Canadian Permanent Representative and Ambassador to the Delegation of Canada to the North Atlantic Council, Paris. Albert Frederick Hart: to be High Commissioner for Canada in Ghana and concurrently Canadian Ambassador to Togo and the Upper Volta. Joseph Jean Martial Côté: to be Canadian Ambassador to Senegal. Blanche Margaret Meagher: to be High Commissioner for Canada in Kenya. **1967.** Blanche Margaret Meagher: to be High Commissioner for Canada in Uganda. James Russell McKinney: to be High Commissioner for Canada in Barbados. René Garneau: to be Canadian Ambassador to Algeria.

**National Defence Appointments.—1966.** *June 22*, Lt.-Gen. J. V. Allard: to be Chief of the Defence Staff, *vice* Air Marshal Frank Miller, from July 16, 1966.

**Air Transport Board.—1966.** *July 21*, James Flood Clark, Montreal, Que.: to be a member for ten years from Sept. 1, 1966.

**Air Canada.—1966.** *Sept. 29*, Welland D. Woodruff, Toronto, Ont.: to be a Director for three years from Sept. 30, 1966, *vice* Hon. Leslie M. Frost.

**Army Benevolent Fund Board.—1966.** *Jan. 5*, Alex Walker: to be again a member for four years. *Mar. 3*, Jack C. Lundberg, Belleville, Ont.: to be a member for four years.

**Atlantic Development Board.—1966.** *Jan. 7*, Ian M. MacKeigan, Robert Cheyne Eddy and Albert Martin: to be members for three years from Jan. 24, 1966, Mr. MacKeigan to be Chairman. Neil R. McLeod, Summerside, P.E.I.: to be a member for three years, *vice* Melvin J. McQuaid, resigned. **1967.** *Jan. 31*, Calvert Coates Pratt, St. John's,



Nfld.; Simon-Louis Bujold, Moncton, N.B.; John Alexander Likely, Saint John, N.B.; and Charles Arnold Patterson, Dartmouth, N.S.: to be members for three years.

**Board of Broadcast Governors.—1966.** *Feb. 18*, Pierre Juneau, Montreal, Que.: to be a full-time member for seven years and to be Vice-Chairman. David Sim, Ottawa, Ont.: to be a full-time member. *Oct. 21*, Guy Rocher, Montreal, Que.; Miss Edouardina Dupont, Trois-Rivières, Que.; Major Reid, Souris, P.E.I.; and Gordon Waddell Thomas, St. Anthony, Nfld.: to be part-time members for five years. **1967.** *Feb. 2*, George T. Urquhart, Lancaster, N.B.: to be a part-time member for five years.

**Canada Council.—1966.** *Feb. 15*, Louis Hébert, Montreal, Que.: to be a member of the Investment Committee. Claude Robillard, Montreal, Que.: to be a member for three years. *May 13*, David Alexander Colville, Sackville, N.B.: to be a member for three years, *vice* Charles H. Forsyth, resigned. *July 12*, Jean-Adrien Arsenault, Mrs. W. J. Dorrance, Henry D. Hicks, Stuart Keate and C. J. Mackenzie: to be again members. Murray Adaskin, Saskatoon, Sask.: to be a member from July 15, 1966, *vice* J. W. T. Spinks. J. Alexander Corry, Kingston, Ont.: to be a member from July 15, 1966, *vice* G. Edward Hall.

**Canadian Broadcasting Corporation.—1966.** *July 12*, Maxwell Cohen, Montreal, Que.; Margaret Paton Hyndman, Toronto, Ont.; and Léonard Roussel, Ottawa, Ont.: to be Directors from July 15, 1966. David McA. MacAulay, Sackville, N.B.: to be again a Director.

**Canadian Commercial Corporation.—1966.** *May 19*, Arthur Douglas Belyea: to be President, *vice* Ralph MacDonald Trites. Ralph MacDonald Trites: to be a Director during pleasure.

**Canadian Corporation for the 1967 World Exhibition.—1966.** *Feb. 22*, Herbert C. Pinder, Saskatoon, Sask.: to be a Director from Mar. 1, 1966, *vice* R. A. Kramer, resigned. *July 26*, John Stewart Proctor, Toronto, Ont.: to be a Director from Aug. 1, 1966, *vice* Guy Roberge, resigned. *Oct. 20*, Hon. Lionel Chevrier: to be Commissioner General for Visits of State 1967. Lieut.-Gen. Robert William Moncel: to be Co-ordinator for Visits of Heads of State 1967. Lieut.-Gen. Howard Graham: to be Co-ordinator for Royal Visits 1967.

**Canadian Dairy Commission.—1966.** *Dec. 1*, Sydney Clifford Barry, Ottawa, Ont.: to be a member and Chairman. Jules Thibaudeau, Thurso, Que.: to be a member and Vice-Chairman. Lyle Alexander Atkinson, Vancouver, B.C.: to be a member.

**Canada Labour Relations Board.—1966.** *July 26*, Jacques Guilbault, Baie Comeau, Que.: to be a member. *Oct. 6*, John Joseph Quinlan, Ottawa, Ont.: to be Vice-Chairman. *Nov. 22*, Kenneth Hallsworth, Don Mills, Ont.: to be a member as a representative of employers, *vice* Harry Taylor, resigned.

**Canadian Maritime Commission.—1966.** *Feb. 10*, H. J. Darling: to be Chairman from Feb. 21, 1966 for the remainder of his present term as a member.

**Canadian National Railways.—1966.** *Sept. 29*, Donald Gordon, President: to be again a Director and Chairman of the Board of Directors until his retirement from the Presidency on Dec. 31, 1966. N. J. MacMillan, Executive Vice-President: to be President from Jan. 1, 1967 and to be a member and Chairman of the Board of Directors for three years from Jan. 1, 1967. *Oct. 22*, Walter C. Koerner, Vancouver, B.C.; Bernard Tailleux, Montreal, Que.; and David Anderson, Toronto, Ont.: to be again Directors until Sept. 30, 1969. *Dec. 22*, Georges-Emile Lapalme, Montreal, Que.: to be a Director until Sept. 30, 1968, *vice* Jean Louis Levesque. Herbert C. Pinder, Saskatoon, Sask.: to be a Director from Jan. 1, 1967 until Sept. 30, 1968, *vice* Robert Arthur Brown, resigned.

**Canadian Overseas Telecommunication Corporation.—1966.** *Feb. 10*, Gillis Philip Purcell, Toronto, Ont.: to be again a Director for three years from Mar. 15, 1966. *Nov. 8*, Ralph Rubin Levine, Montreal, Que.: to be a Director for three years, *vice* Gordon Cowan, resigned. *Dec. 20*, Roland G. Lefrançois, Montreal, Que.: to be again a Director for three years from Dec. 27, 1966.

**Canadian Pension Commission.—1966.** *Feb. 22*, John Lyndon Thompson, Saint John, N.B.: to be an *ad hoc* member for one year from Apr. 1, 1966. *Feb. 24*, William Andrew Gilmour: to be a member for ten years from Mar. 1, 1966. *June 7*, James Malcolm Cameron, formerly of New Glasgow, N.S.: to be an *ad hoc* member for one year from July 1, 1966. *June 23*, Laurence Wilmott Brown, Ottawa, Ont.: to be an *ad hoc* member for one year from Oct. 3, 1966. *July 25*, John Murray Forman: to be a member and Deputy Chairman for ten years from Dec. 1, 1966. *Nov. 3*, René Jutras, Hull, Que.: to be a member for ten years from Dec. 1, 1966.

**Civil Service Commission.—1967.** *Jan. 31*, Ruth Elizabeth Addison: to be again a member for one year.

**Company of Young Canadians.—1966.** *Jan. 12*, William M. McWhinney: to be Interim Director. *Apr. 14*, Douglas Ward, Toronto, Ont.: to be a member and Chairman. Marc Lalonde, Montreal, Que.: to be a member and Vice-Chairman. Jean Archibald, Halifax, N.S.; Normand Asselin, Ottawa, Ont.; Alan M. Clarke, Ottawa, Ont.; Duncan Edmonds, Winnipeg, Man.; Jacques Gérin, Montreal, Que.; Walter Kubiski, Winnipeg, Man.; Edward Lavallee, Whitehorse, Y.T.; Claude Lebon, Quebec, Que.; Arthur Pape, Toronto, Ont.; R. A. J. Phillips, Ottawa, Ont.; Timothy Reid, Toronto, Ont.; Gordon Selman, Vancouver, B.C.; Lloyd Shaw, Halifax, N.S.; Roland Soucie, Moncton, N.B.; Maurice Strong, Montreal, Que.; and Richard Thompson, Green Lake, Sask.: to be members of the Provisional Advisory Council. *July 15*, Jean Archibald, Normand Asselin, Alan M. Clarke, Duncan Edmonds, Walter Kubiski, Marc Lalonde, Edward Lavallee, Arthur Pape, R. A. J. Phillips, Timothy Reid, Gordon Selman, Lloyd Shaw, Roland Soucie, Richard Thompson and Douglas Ward: to be members of the Provisional Council. *Sept. 27*, Alan M. Clarke: to be executive Director. *Dec. 1*, Rodolphe Lafresnaye, Bevonne Patterson, William Rompke and Juanita Westmoreland: to be members of the Provisional Council.

**Defence Research Board.—1966.** *Jan. 17*, Robert James Uffen: to be Vice-Chairman from Aug. 1, 1966. *Feb. 17*, John Draper Houlding, Montreal, Que.; and Allan Bishop Van Cleave, Regina, Sask.: to be members for three years from Apr. 1, 1966. *Apr. 21*, Wilfred Gordon Bigelow, Toronto, Ont.: to be a member for three years from May 1, 1966. *May 13*, Howard Hillen Kerr, Toronto, Ont.: to be a member for three years from June 1, 1966. **1967.** *Jan. 17*, Robert James Uffen: to be Chairman from Mar. 3, 1967, *vice* Adam Hartley Zimmerman.

**Dominion Coal Board.—1966.** *Feb. 21*, Hon. John Watson MacNaught: to be a member and Chairman from Mar. 5, 1966.

**Economic Council of Canada.—1966.** *Feb. 10*, Roger Perreault, Economiste, Union Catholique des Cultivateurs, Montreal, Que.; R. R. Atkinson, President, National Farmers' Union, Saskatoon, Sask.; J. R. Murray, Managing Director, Hudson's Bay Co., Winnipeg, Man.; and Professeur André Raynauld, Faculté des Sciences Politiques et Sociales, Université de Montréal, Montreal, Que.: to be members for three years. François-E. Cleyne, Walter Charles Koerner, W. Ladyman, Stanley A. Little, Mrs. A. F. W. Plumtre and Francis George Winspear: to be again members for three years. **1967.** *Jan. 19*, Arthur R. Gibbons, Ottawa, Ont.; Hugh Allen Martin, Vancouver, B.C.; Marcel Pepin, Montreal, Que.; and William O. Twaits, Toronto, Ont.: to be again members for three years. Graham Ford Towers, Rockcliffe, Ont.; William Y. Smith, Fredericton, N.B.; and Alfred Rouleau, Lévis, Que.: to be members for three years.

**Export Credits Insurance Corporation.—1966.** *Aug. 17*, J. C. Langley, Acting Assistant Under-Secretary of State for External Affairs: to be a Director, *vice* A. E. Ritchie.

**Farm Credit Corporation.—1966.** *Apr. 28*, Alexander T. Davidson, Assistant Deputy Minister (Rural Development), Dept. of Forestry, Ottawa, Ont.; Stanislas J. Chagnon, Assoc. Deputy Minister, Dept. of Agriculture, Ottawa, Ont.; and Ernest A. Oestreicher, Director, Resources and Development, Dept. of Finance, Ottawa, Ont.: to be members for one year. *Nov. 10*, George Owen: to be a member and Chairman for three years from Dec. 9, 1966. William Harvey Ozard: to be a member and Vice-Chairman for three years from Dec. 9, 1966. Joseph Frederick Parkinson, Economic Adviser, Dept. of Finance, Ottawa, Ont.: to be a member for one year, *vice* Ernest A. Oestreicher.

**Fisheries Prices Support Board.—1966.** *Aug. 10*, Richard I. Nelson, Vancouver, B.C.: to be a member, *vice* Francis Millerd, Sr.

**Historic Sites and Monuments Board of Canada.—1966.** *July 14*, Francis W. P. Bolger, Charlottetown, P.E.I.: to be a member until June 30, 1969.

**Immigration Appeal Board.—1966.** *Sept. 14*, Jean Paul Geoffroy, Longueuil, Que.: to be a member.

**International Commission for the Northwest Atlantic Fisheries.—1966.** *Feb. 10*, A. W. H. Needler, Deputy Minister of Fisheries, Ottawa, Ont.: to be a Commissioner, *vice* Wilson C. MacKenzie.

**International Joint Commission.—1966.** *Jan. 12*, Donald M. Stephens: to be again a Commissioner for two years from Jan. 1, 1966. René Dupuis: to be again a Commissioner for two years from Feb. 23, 1966.

**International North Pacific Fisheries Commission.—1966.** *Aug. 10*, Donovan Francis Miller, Vancouver, B.C.: to be again a member for two years from Aug. 21, 1966.

**International Pacific Halibut Commission.—1966.** *Nov. 10*, F. W. Millerd, Vancouver, B.C.: to be again a member until Oct. 31, 1968.

**International Pacific Salmon Fisheries Commission.—1966.** *Aug. 17*, A. J. Whitmore, Burnaby, B.C.: to be a member until Oct. 31, 1966. *Oct. 13*, Richard Nelson, Sr., New Westminster, B.C.: to be a member for two years from Nov. 1, 1966, *vice* A. J. Whitmore.

**Merchant Seamen Compensation Board.—1966.** *Oct. 6*, Jean-Pierre Després, Assistant Deputy Minister, Dept. of Labour, Ottawa, Ont.: to be a member and Chairman, *vice* Gordon G. Cushing, deceased. J. Howard Currie, Director, Accident Prevention and Compensation Branch, Dept. of Labour, Ottawa, Ont.: to be a member, *vice* Hart D. Clark, resigned.

**National Arts Centre.—1966.** *Dec. 1*, Lawrence Freiman, Ottawa, Ont.: to be a member and Chairman. Claude Robillard, Montreal, Que.: to be a member and Vice-Chairman. Andrée Paradis, Montreal, Que.; Leonard A. Kitz, Halifax, N.S.; and William Teron, Ottawa, Ont.: to be members for four years. Madeleine Gobeil, Ottawa, Ont.; Robertson Davies, Toronto, Ont.; and Anson McKim, Montreal, Que.: to be members for three years. Dorothy Maude Somerset, Vancouver, B.C.; David H. Jones, Winnipeg, Man.; and Arnold Walter, Toronto, Ont.: to be members for two years.

**National Battlefields Commission.—1966.** *Mar. 22*, Renault St-Laurent, Quebec, Que.: to be a Commissioner. Oscar Gilbert, Quebec, Que.: to be Chairman.



**National Capital Commission.—1966.** *Apr. 29*, Graham Ford Towers, Rockcliffe, Ont.; Alfred John Frost, Manotick, Ont.; and Alan R. Philp, Fort Garry, Man.: to be members for three years. *June 7*, Gérald Gaudet, Moncton, N.B.; Warnett Kennedy, Vancouver, B.C.; and Wilfrid Carr, Ottawa, Ont.: to be members for four years. *July 21*, Kenneth Kane Paget, Calgary, Alta.: to be a member for four years. *Aug. 28*, Jane B. MacDonald, Charlottetown, P.E.I.: to be a member for three years.

**National Council of Welfare.—1966.** *Nov. 10*, Amy Leigh, Vancouver, B.C.: to be a member for three years.

**National Design Council.—1966.** *Mar. 22*, Mrs. Claude P. Beaubien, Westmount, Que.: to be a member for three years.

**National Energy Board.—1966.** *Mar. 31*, Robert D. Howland: to be again a member and again Vice-Chairman; and Douglas M. Fraser: to be again a member, both for seven years from Aug. 15, 1966. H. Lee Briggs: to be again a member until July 5, 1973. *Aug. 10*, Robert A. Stead: to be Secretary from Aug. 1, 1966.

**National Film Board.—1966.** *Dec. 1*, Joseph W. Willard, Deputy Minister of Welfare, Department of National Health and Welfare, Ottawa, Ont.; and Phyllis Marguerite Grosskurth, Toronto, Ont.: to be members for three years. *1967. Feb. 2*, R. Gordon Robertson, Clerk of the Privy Council: to be again a member for three years.

**National Gallery of Canada.—1966.** *June 1*, Jean Sutherland Boggs: to be Director.

**National Joint Council of the Public Service of Canada.—1966.** *Sept. 8*, G. G. E. Steele, Under Secretary of State: to be Chairman, *vice* Lucien Lalonde, Deputy Minister of Public Works, who continues as a member of the Official Side of the Council from Sept. 15, 1966. R. C. Labarge, Deputy Minister (Customs and Excise), Dept. of National Revenue: to be Chairman, *vice* G. T. Jackson. Sylvain Cloutier, Civil Service Commissioner, *vice* Ruth Addison, and F. T. Mace, Assistant Deputy Minister, Dept. of Veterans Affairs, *vice* G. T. Jackson: to be members (Official Side) from Sept. 15, 1966.

**National Research Council.—1966.** *Mar. 24*, Louis-Philippe Bonneau, Quebec, Que.; Balfour Watson Currie, Saskatoon, Sask.; Albert Brewer Hunt, Ottawa, Ont.; Lucien Piché, Montreal, Que.; and Leslie W. Shemilt, Fredericton, N.B.: to be members for three years from Apr. 1, 1966.

**Restrictive Trade Practices Commission.—1966.** *Dec. 8*, Albert S. Whiteley: to be a member for ten years.

**Roosevelt Campobello International Park Commission.—1966.** *July 26*, Hon. Alan Aylesworth Macnaughton, Westmount, Que.: to be a member.

**Royal Commissions.—1966.** *Jan. 19*, Hon. Ivan Cleveland Rand, Moncton, N.B.: to be a Commissioner under Part I of the Inquiries Act to inquire into the dealings of the Hon. Mr. Justice Leo A. Landreville with Northern Ontario Natural Gas Limited. *Mar. 7*, Hon. Mr. Justice Dalton C. Wells, Toronto, Ont.: to be a Commissioner under Part I of the Inquiries Act to make such investigation, as in his absolute discretion he deems necessary, into the complaints made by George Victor Spencer. *Mar. 14*, Hon. Wishart Flett Spence, Ottawa, Ont.: to be a Commissioner under Part I of the Inquiries Act to inquire fully into all statements by Cabinet Members and the Prime Minister, with reference to a case involving Gerda Munsinger, and to inquire whether the case was handled in accordance with the rules and principles normally applicable to persons having access to classified information, and into all the relevant circumstances connected therewith, and to consider fully all reports submitted to the government or any member of the government of the day and any evidence laid before them in connection therewith and any further evidence and to consider such other matters as may appear to the Commissioner to be relevant and to report thereon. *May 26*, Clarence Lyle Barber, Winnipeg, Man.: to be a Commissioner

under Part I of the Inquiries Act to inquire into the costs of farm machinery and repair parts. *Nov. 16*, M. W. Mackenzie, Montreal, Que.; Yves Pratte, Quebec, Que.; and Hon. M. J. Coldwell, Ottawa, Ont.: to be Commissioners under Part I of the Inquiries Act to make a full and confidential inquiry into the operation of Canadian security methods and procedures and to advise what security methods and procedures are most effective and how they can best be implemented, and to make such reports for this purpose as they deem necessary and desirable in the national interest; M. W. Mackenzie to be Chairman of the Commission. *1967. Feb. 3*, Mrs. John Bird, Ottawa, Ont.: to be a Commissioner and Chairman of the Royal Commission on the Status of Women: to inquire into and report on the status of women in Canada and to recommend what steps might be taken by the Federal Government to ensure their equality with men in all aspects of Canadian society. *Feb. 16*, Mrs. Ottomar Lange, Claresholm, Alta.; Jeanne Lapointe, Quebec, Que.; Elsie Gregory MacGill, Toronto, Ont.; Mrs. Robert Ogilvy, Fredericton, N.B.; Donald Gordon, Kitchener, Ont.; and Jacques Henripin, Montreal, Que.: to be Commissioners on the Royal Commission on the Status of Women.

**Science Council of Canada.—1966.** *May 24*, Omond McKillop Solandt, Toronto, Ont.: to be a member and Chairman for three years. Roger Gaudry, Montreal, Que.: to be a member and Vice-Chairman for three years. *June 7*, William McColl Armstrong, Vancouver, B.C.; George Malcolm Brown, Ottawa, Ont.; William Henry Gauvin, Pointe Claire, Que.; James Lorne Gray, Ottawa, Ont.; James Merritt Harrison, Ottawa, Ont.; Gordon Neil Patterson, Toronto, Ont.; Percy Ritchie Sandwell, Vancouver, B.C.; Leonard Hillary John Shebeski, Winnipeg, Man.; and Frank Howard Sherman, Hamilton, Ont.: to be members for four years. Robert Glen, Ottawa, Ont.; John Draper Houlding, Montreal, Que.; Leon Katz, Saskatoon, Sask.; Howard Earl Petch, Hamilton, Ont.; and Daniel Wermenlinger, Montreal, Que.: to be members for three years. Bristow Guy Ballard, Ottawa, Ont.; Jessie Gray, Toronto, Ont.; John William Ker, Fredericton, N.B.; Roger Larose, Montreal, Que.; Frank Campbell MacIntosh, Montreal, Que.; Cyrias Ouellet, Quebec, Que.; Edwin Ralph Rowzee, Sarnia, Ont.; Alexander Douglas Turnbull, Victoria, B.C.; and Adam Hartley Zimmerman, Ottawa, Ont.: to be members for two years. Robert Broughton Bryce, Ottawa, Ont.; John James Deutsch, Ottawa, Ont.; Frank Arthur Forward, Ottawa, Ont.; and Sol Simon Reisman, Ottawa, Ont.: to be associate members to hold office during pleasure.

**Special Planning Secretariat of the Privy Council Office.—1966.** *June 21*, John S. Hodgson, Ottawa, Ont.: to be Director of the special Secretariat on Bilingualism. Robert Elie, Ottawa, Ont.: to be Associate Director.

**Tariff Board.—1966.** *Nov. 8*, George Alexander Elliott, Ottawa, Ont.: to be again a member from Apr. 23, 1967 to July 21, 1971.

**Tax Appeal Board.—1967.** *Jan. 17*, Maurice Boisvert, Ottawa, Ont.: to be again a member from May 9, 1967 to Feb. 18, 1972.

**War Veterans Allowance Board.—1966.** *May 26*, Charles Henry Rennie, formerly of Victoria, B.C.: to be again a temporary member for a further period of six months from Oct. 2, 1966. William George Hamilton Roaf, Vancouver, B.C.: to be a member and Deputy Chairman from Dec. 24, 1966. *June 9*, John Harold McDougal Dehler, Ottawa, Ont.: to be a temporary member for a further period of one year from Oct. 15, 1966.

**Yukon Territory Council.—1966.** *Sept. 27*, James Smith, Whitehorse, Y.T.: to be Commissioner from Oct. 15, 1966, *vice* Gordon Robertson Cameron, resigned.

## PART IV.—FEDERAL LEGISLATION, 1966-67

Legislation passed in the first session of the Twenty-seventh Parliament from Jan. 18, 1966 to Mar. 22, 1967 (the date of Easter adjournment) is outlined in the following statement. Naturally in summarizing material of this kind it is not always possible to convey the full implication of the legislation. The reader who is interested in any specific Act is therefore referred to the *Statutes of Canada* in the given volume and chapter.

**Legislation of the First Session of the Twenty-seventh Parliament,  
Jan. 18, 1966 to Mar. 22, 1967\***

Subject, Chapter and Date of Assent	Synopsis
14-15 ELIZ. II	
<b>Agriculture—</b>	
<b>1966</b>	
17 May 12	<i>An Act to amend the Farm Credit Act</i> increases the capital of the Farm Credit Corporation from \$24,000,000 to \$40,000,000, the effect of which is to raise the limit of the amount that the Corporation may borrow from the Consolidated Revenue Fund from \$600,000,000 to \$1,000,000,000.
34 July 11	<i>The Canadian Dairy Commission Act</i> authorizes the establishment of a three-member Commission, the function of which is to provide efficient producers of milk and cream with the opportunity of obtaining a fair return for their labour and investment and to provide consumers of dairy products with a continuous and adequate supply of dairy products of high quality.
37 July 11	<i>An Act to amend the Crop Insurance Act</i> increases the maximum contribution payable by Canada on crop insurance premiums; increases the maximum amount of the insurance that may be effected on any crop; authorizes contributions to a province providing insurance coverage against losses arising from the destruction of fruit trees or perennial plants or losses arising when seeding of land intended to be used to grow an insured crop is prevented by weather or other hazards; and makes other administrative amendments.
52 Nov. 17	<i>The Livestock Feed Assistance Act</i> authorizes the establishment of a Canadian Livestock Feed Board for the purpose of assisting livestock feeders in Eastern Canada and British Columbia; it empowers the Board to make payments related to the cost of feed grain storage and transportation for the benefit of livestock feeders, to ensure the availability of adequate supplies of feed grain and to enter into direct marketing operations in feed grain; the Act provides for the administration of the Board and for expenditures in connection with its operations.
<b>Economic Development—</b>	
<b>1966</b>	
11 May 12	<i>An Act to amend the Agricultural Rehabilitation and Development Act</i> extends the application of the Act to all rural areas in Canada where projects of the nature provided for under the Act can be advantageously undertaken whether or not the area in question is in whole or in part an agricultural area. The name of the Act is changed to "An Act to provide for the rehabilitation and development of rural areas in Canada".
31 July 11	<i>An Act to amend the Atlantic Development Board Act</i> increases the amount that the Minister of Finance may credit the Atlantic Development Fund from \$100,000,000 to \$150,000,000 and provides that Board revenues may be credited to the Fund; authority of the Board is extended to undertake projects alone or jointly with provinces or agencies thereof.
41 July 11	<i>The Fund for Rural Economic Development Act</i> authorizes the establishment of a fund for the economic and social development of special rural development areas and an advisory board for the administration of the Fund, the total of payments from which will not exceed \$50,000,000; the Act also authorizes the entering into agreements with the provinces for comprehensive rural development programs.
<b>1967</b>	
80 Mar. 10	<i>An Act to amend the Fund for Rural Economic Development Act</i> increases to \$300,000,000 the total amount that may be charged to the Fund for purposes of the Act.

\* Parliament adjourned Mar. 22, 1967; the first session continued on Apr. 3, 1967.



**Legislation of the First Session of the Twenty-seventh Parliament,  
Jan. 18, 1966 to Mar. 22, 1967—continued**

Subject, Chapter and Date of Assent			Synopsis
<b>Finance—</b>			
<b>1966</b>			
1	Feb. 8		<i>Appropriation Act No. 1, 1966</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1966.
3	Mar. 9		<i>Appropriation Act No. 2, 1966</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1966 (Main Supply).
5	Mar. 31		<i>Appropriation Act No. 3, 1966</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1967.
6	Mar. 31		<i>Appropriation Act No. 4, 1966</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1966.
7	Mar. 31		<i>An Act to amend the Bank Act and the Quebec Savings Banks Act</i> extends the charters of existing banks to Dec. 1, 1966.
12	May 12		<i>An Act to amend the Bills of Exchange Act</i> permits banks to pay cheques on a Saturday or legal holiday on which they are open for business and enables banks to close on what would ordinarily be a business day, permitting them to comply with labour legislation and adjust to the business customs of a community. Adjustments were made with respect to certain legal holidays.
13	May 12		<i>An Act to amend the Bretton Woods Agreements Act</i> authorizes Canada's acceptance of an increase in its quota to the International Monetary Fund and a corresponding increase in its subscriptions to the resources of the International Bank for Reconstruction and Development.
20	June 2		<i>Appropriation Act No. 5, 1966</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1967.
29	July 11		<i>Appropriation Act No. 6, 1966</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1967.
30	July 11		<i>Appropriation Act No. 7, 1966</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1967.
51	Nov. 17		<i>Appropriation Act No. 8, 1966</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1967.
54	Nov. 28		<i>An Act to amend the Bank Act and the Quebec Savings Banks Act</i> extends the charters of existing banks to Jan. 1, 1967.
55	Nov. 30		<i>Appropriation Act No. 9, 1966</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1967 (Main Supply).
56	Dec. 14		<i>Appropriation Act No. 10, 1966</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1967.
<b>1967</b>			
70	Feb. 17		<i>The Canada Deposit Insurance Corporation Act</i> authorizes the establishment of the Canada Deposit Insurance Corporation, the objects of which are to provide, for the benefit of persons having deposits with member institutions, insurance against loss of such deposits, to provide deposit insurance for federal institutions and to enter into contracts of deposit insurance with provincial institutions; the Corporation is authorized to examine into the affairs of member institutions and to accumulate, manage and invest a deposit insurance fund and other funds accumulated as a result of its operations.
73	Mar. 1		<i>Appropriation Act No. 1, 1967</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1967.
83	Mar. 10		<i>An Act to amend the Small Businesses Loans Act</i> extends the life of the Act to Dec. 31, 1969; extends the provisions to cover small construction, transportation or communications businesses; removes certain restrictions; increases the maximum annual gross revenue limit of a small business from \$250,000 to \$500,000 and increases the aggregate principal amount of all loans made to \$300,000,000.
85	Mar. 23		<i>Appropriation Act No. 2, 1967</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1967.
86	Mar. 23		<i>Appropriation Act No. 3, 1967</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1968.

**Legislation of the First Session of the Twenty-seventh Parliament,  
Jan. 18, 1966 to Mar. 22, 1967—continued**

Subject, Chapter and Date of Assent	Synopsis
<b>Finance—concluded</b>	
<b>1967</b>	
87 Mar. 23	<i>The Bank Act</i> is the decennial revision of the Bank Act, empowering the chartered banks to carry on business under revised legislation for a further period of ten years.
88 Mar. 23	<i>An Act to amend the Bank of Canada Act</i> authorizes the Government, under specified conditions, to give the Bank a directive concerning monetary policy, authorizes the imposition of a minimum variable secondary reserve requirement for the chartered banks and makes other technical changes.
89 Mar. 23	<i>The Federal-Provincial Fiscal Arrangements Act, 1967</i> authorizes the making of certain fiscal payments to provinces, authorizes the entry into tax collection agreements with provinces, and amends the Established Programs (Interim Arrangements) Act.
93 Mar. 23	<i>The Quebec Savings Bank Act</i> is the decennial revision of the Quebec Savings Banks Act, empowering these savings banks to carry on business under revised legislation for a further period of ten years.
<b>Government—</b>	
<b>1966</b>	
2 Feb. 23	<i>An Act to extend the time for consideration of objections pursuant to section 20 of the Electoral Boundaries Readjustment Act with respect to the reports of commissions established for the decennial census taken in the year 1961.</i>
21 June 2	<i>The Newfoundland Additional Financial Assistance Act, 1966</i> provides for the payment to the Province of Newfoundland of an annual grant of \$8,000,000, being additional financial assistance contemplated by Term 29 of the Terms of Union of Newfoundland with Canada.
22 June 2	<i>An Act to amend the Northwest Territories Act</i> increases the number of elected members of the Council of the Northwest Territories from four to seven; increases to \$5,000 per annum the maximum indemnity of elected members, provides for the payment of \$3,500 annually to appointed members, and exempts part of these indemnities from income tax; provides for the payment of reasonable travelling and living expenses for members attending sessions of the Council; and makes administrative and financial provisions in connection therewith, as well as other administrative changes.
25 June 16	<i>The Government Organization Act, 1966</i> authorizes the establishment of several new Departments of Government and the offices of the Ministers of those Departments, setting out their respective powers, duties and functions; administrative and financial matters related or incidental thereto are provided for.
28 June 16	<i>An Act to amend the Yukon Act</i> increases to \$5,000 per annum the maximum indemnity payable to members of the Council of the Yukon Territory, part of which is exempt from income tax, and provides for an annual indemnity of \$300 to members of the advisory committee on finance; provides for payment of reasonable travelling and living expenses for Council and committee members attending sessions or sittings; and makes administrative and financial provisions in connection therewith, as well as other administrative changes.
57 Dec. 14	<i>The Manitoba-Saskatchewan Boundary Act, 1966</i> declares a portion of the boundary line surveyed and marked on the ground under the direction of Commissioners appointed therefor to be the boundary line between the Provinces of Manitoba and Saskatchewan.
58 Dec. 14	<i>The Saskatchewan-Northwest Territories Boundary Act, 1966</i> declares the boundary line surveyed and marked on the ground under the direction of Commissioners appointed therefor to be the boundary between the Province of Saskatchewan and the Northwest Territories.
61 Dec. 21	<i>The Manitoba-Northwest Territories Boundary Act, 1966</i> declares the boundary line surveyed and marked on the ground under the direction of the Commissioners appointed therefor to be the boundary line between the Province of Manitoba and the Northwest Territories.
<b>1967</b>	
71 Feb. 23	<i>The Public Service Employment Act</i> replaces the Civil Service Act; it retains the merit system of appointment and promotion as well as the type of job security long in effect, but extends them to prevailing rate employees and ships' officers and crews; the Civil Service Commission becomes the Public Service Commission.

**Legislation of the First Session of the Twenty-seventh Parliament,  
Jan. 18, 1966 to Mar. 22, 1967—continued**

Subject, Chapter and Date of Assent	Synopsis
<b>Government—concl.</b>	
<b>1967</b>	
72 Feb. 23	<i>The Public Service Staff Relations Act</i> provides for the establishment of a system of collective bargaining applicable to employees in the public service of Canada, for the resolution of disputes that may arise in the negotiation of collective agreements, and for grievance procedures; it authorizes the establishment of a Public Service Staff Relations Board to be responsible for the administration of the Act and the constitution and appointment of other authorities and employees as are required.
74 Mar. 1	<i>An Act to amend the Financial Administration Act</i> amends certain provisions of the Act relating to the functions of the Treasury Board in order to define the expanded role envisaged for the Board in relation to the effective control and management of the public service, taking into account the institution of collective bargaining within the public service.
81 Mar. 10	<i>The Governor General's Retiring Annuity Act</i> provides for the payment of a retiring annuity to the Governor General of Canada.
84 Mar. 23	<i>The Statutory Salaries Revision Act, 1967</i> provides for the revision of certain salaries fixed by statute.
<b>Health and Welfare—</b>	
<b>1966</b>	
42 July 11	<i>The Health Resources Fund Act</i> provides for the establishment of a Health Resources Fund to assist provinces in the acquisition, construction and renovation of health training facilities and research institutions.
45 July 15	<i>The Canada Assistance Plan</i> authorizes the making of contributions by Canada toward the cost of programs for the provision of assistance and welfare services to and in respect of persons in need.
64 Dec. 21	<i>The Medical Care Act</i> authorizes the payment of contributions by Canada toward the cost of insured medical care services incurred by provinces pursuant to provincial medical care insurance plans.
65 Dec. 21	<i>An Act to amend the Old Age Security Act</i> provides for the payment of a guaranteed income supplement to certain Old Age Security pensioners up to a maximum of 40 p.c. of the amount of pension payable under the Act; it also provides for the determination of the income of a pensioner for purposes of the supplement and other related matters.
<b>Justice—</b>	
<b>1966</b>	
4 Mar. 31	<i>An Act to amend the Admiralty Act</i> authorizes the appointment of up to three deputy judges, each with full jurisdiction of a District Judge in time of the latter's incapacity; it also extends the area of jurisdiction of sheriffs as Marshals of the Court and provides that deputy sheriffs are to be Deputy Marshals of the Court.
8 Mar. 31	<i>An Act to amend the Judges Act</i> authorizes the provision of salaries for eight additional judges.
23 June 16	<i>An Act to amend an Act to amend the Combines Investigation Act and the Criminal Code</i> further extends the exemption of British Columbia fishermen or persons and associations engaged in the buying or processing of fish in that province from the provisions of the Act.
32 July 11	<i>An Act to amend the Bankruptcy Act</i> is an interim measure intended to provide remedies in situations where it has been shown by experience that abuses of the bankruptcy process are most likely to occur, to correct abuses that have occurred in the administration of small estates and to provide special measures for the orderly payment of debts.
39 July 11	<i>An Act to amend the Exchequer Court Act</i> is a minor amendment eliminating the use of taxation stamps in the payment of fees to the Registrar of the Exchequer Court of Canada.
44 July 11	<i>The Statute Law (Superannuation) Amendment Act, 1966</i> provides, because of the contributions required under the Canada Pension Plan, for a reduction in the contributions to certain superannuation or pension funds or plans established by Parliament and for the correlation of pensions or annuities payable under those funds or plans with the Canada Pension Plan; extends the portability provisions of certain of those plans; raises the limit on the amount of the supplementary death benefit payable to Public Service employees and members of the Canadian Forces; and makes related administrative amendments.



**Legislation of the First Session of the Twenty-seventh Parliament,  
Jan. 18, 1966 to Mar. 22, 1967—continued**

Subject, Chapter and Date of Assent	Synopsis
<b>Justice—concluded</b>	
<b>1967</b>	
68 Feb. 9	<i>An Act to amend the Judges Act</i> authorizes the provision of salaries for two additional judges.
76 Mar. 1	<i>An Act to amend the Judges Act</i> revises judicial salaries and makes other amendments respecting travelling expenses, etc.
<b>Labour—</b>	
<b>1966</b>	
24 June 16	<i>An Act to amend the Fair Wages and Hours of Labour Act</i> changes the general standard of hours of work on Federal Government contracts from 44 hours in a week to 40 hours, provides that no wage rate less than \$1.25 an hour shall be paid for work under such contracts, thus achieving consistency with the Canada Labour (Standards) Code.
27 June 16	<i>The Training Allowance Act, 1966</i> is an Act respecting allowances to persons being trained under technical and vocational training programs; it authorizes the entering into agreements with the provinces in connection therewith and contains certain changes relating to the administration of the Unemployment Insurance Act.
49 July 15	<i>The St. Lawrence Ports Working Act</i> ensures that the conclusions of the industrial inquiry commission, set up to inquire into working conditions at the ports of Montreal, Trois-Rivières and Quebec, be implemented, as recommended by the mediator.
59 Dec. 14	<i>An Act to amend the Canada Labour (Standards) Code</i> makes provision for general holidays and annual vacations in respect of employment within the jurisdiction of Parliament not previously covered in the Code because the employment is customarily provided for the benefit of a number of separate employers; this is particularly applicable to the stevedoring industry.
62 Dec. 21	<i>The Canada Labour (Safety) Code</i> sets out the duties of employers and employees respecting the prevention of employment injury in federal works, undertakings and businesses.
<b>1967</b>	
92 Mar. 23	<i>The Pension Benefits Standards Act</i> refers to pension plans organized and administered for the benefit of persons employed in connection with certain federal works, undertakings and businesses.
<b>Revenue—</b>	
<b>1966</b>	
14 May 12	<i>The Canada-United Kingdom Income Tax Agreement Act, 1966</i> implements an Agreement between Canada and the United Kingdom for the avoidance of double taxation with respect to taxes on certain classes of income and implements a Supplementary Income Tax Agreement between Canada and Sweden.
38 July 11	<i>An Act to amend the Customs Tariff</i> implements the Customs Tariff Resolution presented in the Budget Speech of Mar. 29, 1966.
40 July 11	<i>An Act to amend the Excise Tax Act</i> implements the Excise Tax Act Resolution presented in the Budget Speech of Mar. 29, 1966.
43 July 11	<i>The Public Utilities Income Tax Transfer Act</i> authorizes the Minister of Finance to transfer to the provinces a proportion of the income tax payable by certain public utility companies.
47 July 15	<i>An Act to amend the Income Tax Act</i> implements the Income Tax Resolution presented in the Budget Speech of Mar. 29, 1966.
<b>1967</b>	
75 Mar. 1	<i>The Canada-Trinidad and Tobago Income Tax Agreement Act, 1967</i> implements agreements for the avoidance of double taxation with respect to income tax between Canada and Trinidad and Tobago, Canada and Ireland, Canada and Norway and Canada and the United Kingdom, and implements a supplementary income tax convention between Canada and the United States.
79 Mar. 10	<i>An Act to amend the Excise Tax Act and the Old Age Security Act</i> increases the sales tax from 8 p.c. to 9 p.c. on all goods except building materials and other goods previously exempt, and also raises the old age security tax payable on the taxable income of an individual from \$120 to \$240.

**Legislation of the First Session of the Twenty-seventh Parliament,  
Jan. 18, 1966 to Mar. 22, 1967—continued**

Subject, Chapter and Date of Assent	Synopsis
<b>Revenue—concluded</b>	
<b>1967</b>	
91 Mar. 23	<i>An Act to amend the Income Tax Act and to repeal the Canadian Vessel Construction Assistance Act</i> incorporates in the Income Tax Act the provisions analogous to those in the Canadian Vessel Construction Assistance Act and repeals the latter. It also implements items of the Income Tax Resolution dealing with deferred profit-sharing and supplementary benefit plans.
<b>Scientific and Industrial Research—</b>	
<b>1966</b>	
19 May 12	<i>The Science Council of Canada Act</i> provides for the establishment of a Science Council of Canada.
26 June 16	<i>An Act to amend the Research Council Act</i> changes the formal title of the Council to "National Research Council of Canada", authorizes the payment of remuneration to members for duties performed in addition to their regular duties, authorizes temporary appointments and the establishment of a national science library, and makes relative administrative changes.
<b>1967</b>	
82 Mar. 10	<i>The Industrial Research and Development Incentives Act</i> provides general incentives to industry for the expansion of scientific research and development in Canada and effects certain related amendments to the Income Tax Act.
<b>Trade—</b>	
<b>1966</b>	
16 May 12	<i>An Act to amend the Export and Import Permits Act</i> extends the duration of the Act for a further period of three years, to July 31, 1969.
63 Dec. 21	<i>An Act to amend the Export Credits Insurance Corporation</i> to issue unconditional guarantees to banks in connection with transactions insured by the Corporation and to enter into agreements with foreign governments in connection with certain transactions and reschedule debts owed to the Corporation in respect thereof; it increases from \$400,000,000 to \$500,000,000 the maximum liability to the Corporation at any time.
<b>Transportation—</b>	
<b>1966</b>	
9 Mar. 31	<i>The Milltown Bridge Act</i> authorizes the construction of a bridge across the St. Croix River between the Province of New Brunswick and the State of Maine.
10 May 12	<i>An Act to amend the Aeronautics Act</i> authorizes the imposition of charges for the use of Department of Transport facilities and services and of charges for their availability to aircraft during flights within Canada; authorizes the establishment of boards to investigate aircraft accidents and provides for the payment of expenses of witnesses appearing before such boards; provides for an increase in the membership of the Air Transport Board, setting terms of office and retirement age; and makes other administrative changes.
15 May 12	<i>An Act respecting the construction of a line of railway in the Province of Ontario by Canadian National Railway Company</i> from the vicinity of Amesdale on the Redditt Subdivision of the CNR in a northwesterly direction for a distance of approximately 68 miles to a point in the vicinity of Bruce Lake in the District of Kenora.
35 July 11	<i>An Act respecting the construction by Canadian National Railway Company of a line of railway in the Province of Manitoba from the vicinity of Stall Lake on the Chisel Lake Subdivision of the CNR in a northeasterly direction for a distance of approximately 12 miles to a point in the vicinity of Osborne Lake in The Pas Mining District of that Province, and of a line of railway in the Province of Saskatchewan from the vicinity of Watrous on the Watrous Subdivision of the said Railway in a northeasterly direction for a distance of approximately 18 miles to a point in the vicinity of Guernsey in the Regina Mining District of that Province.</i>
50 Sept. 1	<i>The Maintenance of Railway Operation Act, 1966</i> provides for the resumption of operations of railways and for the settlement of the existing dispute with respect to terms and conditions of employment between railway companies and their employees.

**Legislation of the First Session of the Twenty-seventh Parliament,  
Jan. 18, 1966 to Mar. 22, 1967—concluded**

Subject, Chapter and Date of Assent	Synopsis
<b>Transportation— concluded</b>	
<b>1967</b>	
67 Feb. 9	<i>The Canadian National Railways Financing and Guarantee Act, 1965-1966</i> authorizes the provision of money to meet certain capital expenditures of the CNR system for the period Jan. 1, 1965 to June 30, 1967 and authorizes the guarantee of certain securities to be issued by the CNR.
69 Feb. 9	<i>The National Transportation Act</i> defines and implements a national transportation policy for Canada and establishes the Canada Transport Commission as the national transportation authority to effect the objectives of that policy.
<b>Miscellaneous—</b>	
<b>1966</b>	
18 May 12	<i>The Fisheries Development Act</i> provides for the development of the commercial fisheries of Canada through the undertaking of federal or federal-provincial projects and the financing thereof and provides for the establishment of advisory committees for carrying out the purposes of the Act.
33 July 11	<i>An Act to amend the Canada Student Loans Act</i> increases provincial allocations for the loan year commencing July 1, 1965 and subsequent years by authorizing a supplementary allocation to a province applying for it amounting to 20 p.c. of the basic loan for the year; the annual basic loan is increased to \$58,000,000.
36 July 11	<i>The Company of Young Canadians Act</i> provides for the establishment of the Company of Young Canadians, the objects of which are to support, encourage and develop programs for social, economic and community development in Canada and abroad through voluntary service.
42 July 15	<i>An Act to amend the Canadian Corporation for the 1967 World Exhibition Act</i> increases the protection afforded to marks of the Corporation and the official symbol of the Exhibition in their application to goods or wares, and vests in the Corporation copyright in reproductions of the site of the Exhibition and of artistic works located thereon for a limited term.
48 July 15	<i>The National Arts Centre Act</i> authorizes the establishment of the National Arts Centre Corporation, the objects of which are to operate and maintain the Centre, to develop the performing arts in the National Capital region and to assist the Canada Council in the development of the performing arts elsewhere in Canada.
53 Nov. 22	<i>An Act to amend the National Housing Act, 1954</i> increases the loan ratio for rental housing from 85 p.c. to 90 p.c. of the lending value; provides that loans on existing housing be insurable on conditions similar to loans for new housing; increases to \$9,500,000,000 the amount of loans that may be insured under the Act and to \$4,000,000,000 the amount available for lending by CMHC; increases to \$350,000,000 the amount available for student housing projects and authorizes the use of such housing for other than university students; and extends for three years the time limit relating to sewage treatment projects.
60 Dec. 14	<i>An Act to amend the Canada Lands Surveys Act</i> makes revisions relating to the appointment, duties and fees of special examiners of candidates for admission as articulated pupils with a Dominion Land Surveyor and makes certain other technical amendments to the Act.
<b>1967</b>	
66 Feb. 9	<i>An Act to amend the Canada Corporations Act to facilitate the incorporation by letters patent of corporations without objects of pecuniary gain</i> provides an effective alternative to incorporation by special Act for voluntary corporations functioning in a national patriotic, religious, philanthropic, charitable, scientific, artistic, social, professional or sporting field.
77 Mar. 1	<i>The Postal Services Interruption Relief Act</i> provides relief in certain cases against loss or hardship as a result of interruptions of normal postal services.
78 Mar. 10	<i>The Canadian Film Development Corporation Act</i> authorizes the establishment of a Canadian Film Development Corporation, the objects of which are to foster and promote the development of a feature film industry in Canada, and provides for this purpose an appropriation of \$10,000,000.
90 Mar. 23	<i>The Immigration Appeal Board Act</i> provides for appeals to an Immigration Appeal Board in respect of certain matters relating to immigration.



## PART V.—CANADIAN CHRONOLOGY

Events in the general chronology from 1497 to 1866 are given in the 1951 Year Book, pp. 46-49; from 1867 to 1953 in the 1954 Year Book, pp. 1259-1264; and annually from that year on in successive editions. A reprint entitled *Canadian Chronology, 1497-1960* is also available from the Dominion Bureau of Statistics. The following listing covers the year 1966 and January 1967 and it should be mentioned that certain of the dates given therein are approximate. References regarding changes in federal and provincial legislatures or ministries are not included but may be found in Chapter II on Constitution and Government or in Appendix I.

## 1966

**January:** Postmaster-General Jean-Pierre Côté announced the dismissal of Victor Spencer, Vancouver postal clerk, for his alleged participation in a spy plot. Lucien Lamoureux, M.P. for Stormont, named Speaker of the House of Commons. *Jan. 3*, Council of regents to advise on location and operation of new community colleges, to be formally known as colleges of applied arts and technology, announced by Ontario Education Minister Davis. *Jan. 4*, Second annual review of the Economic Council of Canada released. *Jan. 5*, Resignation from the Senate of Hon. Wishart McL. Robertson, Speaker of the Senate from 1953-57, announced. *Jan. 6*, In an unprecedented agreement with the Federal Government, Ontario to undertake responsibility for Indian education, housing, employment, etc., in the province. *Jan. 6-7*, Federal-provincial conference of attorneys-general; the conference approved in principle the setting up of a Central Bureau of Information similar to "Interpol". *Jan. 7*, A CNR train stranded in Fraser Valley by snow and mud slides; about 200 passengers airlifted out. Convictions in Montreal for the sale of Irish Sweepstakes tickets resulted in a fine of \$15,000 for Mrs. Francis Kelly and of \$20,000 for Anthony Sullivan. Letter of Eric Kierans, acting Minister of Revenue in Quebec, to U.S. Commerce Secretary protesting guidelines asking for reduction of U.S. companies' investment abroad revealed; on Jan. 11 a letter to U.S. Treasury Secretary Fowler also revealed; Kierans admitted a diplomatic error. Sending of emergency food supplies to drought-stricken areas of Africa (Zambia, Rhodesia, Bechuanaland and Basutoland) in co-operation with Britain and Australia announced by Prime Minister Pearson. *Jan. 7-8*, Federal-provincial welfare ministers' conference at Ottawa resulted in increased financial aid to the provinces. *Jan. 10*, Death of Prime Minister Shastri of India at Tashkent, U.S.S.R., following agreement between Pakistan and India to settle their differences without war. First meeting of the National Indian Advisory Board held in Ottawa. *Jan. 11*, Death of Senator J. W. Comeau of Nova Scotia. *Jan. 11-12*, Commonwealth Prime Ministers met at Lagos, Nigeria, to deal with Rhodesian political issue; Prime Minister Pearson's suggestion for action accepted. *Jan. 13*, Federal-provincial conference on manpower training began in Ottawa. The Federal Government announced establishment of a major test-program to upgrade the skills of the unemployed. Announcement of a \$1,000,000 long-term loan to Ceylon for the purchase of industrial raw materials under the international development assistance program. *Jan. 14*, Announcement of Canada's intention to build a \$1,500,000 technical school in Nigeria and provide temporary teaching staff. *Jan. 17-21*, Strike of 27,000 students in Quebec trade and technical schools in protest against the extension of the school year by 2½ weeks. *Jan. 18*, Pledging conference for World Food Programme held in New York; Agriculture Minister Greene appointed Chairman; Canadian contribution valued at \$27,500,000 (U.S.). First session of the 27th Parliament opened; highlights of Speech from the Throne included a national medical care insurance

program, revision of the Railway Act and the Bank Act, and establishment of a National Dairy Commission, a Science Council, a Development Corporation, and the Company of Young Canadians. *Jan. 19*, Justice Minister Cardin announced the establishment of a commission of inquiry into the case of Mr. Justice Leo Landreville of the Ontario Supreme Court, to be conducted by Hon. I. C. Rand, former Judge of the Supreme Court of Canada. Mrs. Indira Gandhi, daughter of India's first Prime Minister, Jawaharlal Nehru, elected the first woman Prime Minister of India. *Jan. 20*, Nancy Greene, Rossland, B.C., won first place in the slalom event of the "Silver Jug" women's ski races at Bad Gastein, Austria. *Jan. 22*, Deferment of the Fulton-Favreau formula for constitutional amendment, approved by a Federal-Provincial Conference in 1964, announced by Hon. Guy Favreau, President of the Privy Council. *Jan. 25*, The Supreme Court of Canada ruled Indians on reserves are not entitled to unrestricted year-round hunting rights. *Jan. 27*, Announcement of return of Portland Island, a gift of British Columbia to H.R.H. Princess Margaret in 1958, to the province for use as a provincial park to be known as Princess Margaret Park. *Jan. 30*, 100,000 Canadians aged 69 became the first persons of that age eligible for the \$75 Old Age Security pensions. *Jan. 31*, The Quebec Court of Appeals reversed the contempt-of-court conviction against Montreal author Jacques Hebert, found guilty Feb. 23, 1965 for statements in his book *I Accuse the Assassins of Coffin*.

**February:** *Feb. 2*, Report of the Senate Committee on the Aging tabled in the Senate; recommendations include a guaranteed minimum income at age 65 and opportunity for the senior citizen to maintain himself as a productive member of society. *Feb. 3*, First soft landing on the moon accomplished by U.S.S.R. unmanned space capsule *Luna IX*. Prime Minister Pearson announced economic measures against Rhodesia: (1) a ban on all imports of goods of Rhodesian origin and (2) a ban on all exports of Canadian goods to Rhodesia with limited exceptions, in addition to previous embargo on arms and oil and oil products. *Feb. 4*, Death at Baddeck, N.S., of Dr. Gilbert Hovey Grosvenor, Chairman of the Board of the National Geographic Society and son-in-law of inventor Alexander Graham Bell, at age 90. The Northwest Territories Council gave approval in principle to a plan to form the Territories into a province. *Feb. 6*, Petra Burka of Toronto, 1965 world and Canadian women's figure skating champion, retained her Canadian title. *Feb. 9*, Ontario sales tax raised from 3 p.c. to 5 p.c. *Feb. 10*, Plan for Metropolitan Ottawa as outlined in report by Commissioner Murray V. Jones released Aug. 9, 1965, rejected by almost unanimous opposition from councillors and communities involved. Strike of members of the Oshawa unit of the Toronto Newspaper Guild against the *Oshawa Times*, which began Jan. 27, settled. Correspondence with provincial premiers confirming the federal decision to raise grants to Canadian universities from \$2 to \$5 per capita of provincial population tabled in the House of Commons; the grant to the Quebec Government was understood

by Premier Lesage to be unconditional. Violence marked the 21st day of the International Brotherhood of Teamsters strike against 14 companies in Toronto and Brantford. *Feb. 11*, Second National Press Club of Canada awards for outstanding contributions to journalism presented to Ross Munro, publisher of *The Canadian*, and Stuart Keate, publisher of *The Vancouver Sun*. *Feb. 12*, Nancy Greene, Rossland, B.C., won the women's slalom title at the Canadian international ski championship competitions held at Banff, Alta., the first held in Canada under the sanction of the International Ski Federation. *Feb. 14*, Australia's monetary system changed from sterling to the decimal system, both old and new currency to be acceptable for the next two years. *Feb. 15*, Agreement in principle between the Federal and Manitoba Governments to combine in \$300,000,000 development of the hydro potential of the Nelson River, the first phase to be completed by 1971. *Feb. 16*, Death of Senator Paul Henri Bouffard in Quebec, Que. Strike of 354 teachers in Hull, Que., area ended after seven weeks in the signing of a new collective agreement; this was the last of three Roman Catholic teacher walkouts in the province since the beginning of 1966. Quebec Government grants to McGill University severely reduced in comparison with grants to other universities in the province. *Feb. 17*, Death of Margaret Arnett MacLeod, Manitoba historian and author, in Winnipeg, at age 88. *Feb. 18*, Interim pay increases and bonuses for re-enlistment in the Armed Forces announced. Ontario's non-compulsory medical care scheme given Royal Assent; to come into effect July 1. *Feb. 20*, Death of Fleet Admiral Chester Nimitz, Commander of allied naval forces in the Pacific in World War II. *Feb. 21*, Accidental death of Lieutenant-Governor Paul Comtois of Quebec in a fire that razed the viceregal residence. *Feb. 22*, Hugues Lapointe, agent general of Quebec in London, sworn in as Quebec's 22nd Lieutenant-Governor. *Feb. 23*, Prime Minister Pearson announced that no inquiry would be held into the case of George Victor Spencer, the Vancouver postal clerk who was dismissed after being named as a suspect in a spy case. *Feb. 24*, Contempt of court proceedings begun against 28 men charged with violating an injunction by engaging in mass picketing at Tilco Plastics Co. Ltd. in Peterborough. Kwame Nkrumah, President of Ghana, ousted in an army revolt. *Feb. 25*, The eight-mile route of the \$200,000,000 east-west subway of Toronto Transportation Commission officially opened by Prime Minister Pearson. Ottawa City Council approved the building of the \$3,400,000 Lansdowne Park Civic Centre. *Feb. 26*, Accidental death of Donald William Buchanan, Ottawa, authority on Canadian and international art, photographer and former associate director of the National Gallery.

**March:** *Mar. 1*, Gold bars worth \$450,000 stolen at Winnipeg International Airport; all but one recovered; two prison sentences resulted. *Mar. 2*, First landing of a satellite on the planet Venus announced by the U.S.S.R. *Mar. 3*, Special gold medal presented by the Professional Institute of the Public Service to Gen. A. G. L. McNaughton "in recognition of a Canadian who has richly endowed his country through a lifetime of military and public service". Gold medals also presented to Dr. James M. Harrison, Ottawa, for leadership in geological research and to Dr. William E. Ricker, Nanaimo, B.C. for contributions to fisheries industries. Award of the 1965 Stephen Leacock Memorial medal for humour to George Bain, Ottawa columnist for the *Globe and Mail*, for his book *Nursery Rhymes to be Read Aloud by Young Parents with Old Children*. *Mar. 4*, A CPA DC-8 jetliner with 72 persons aboard crashed in Tokyo; 64 persons killed, including 18 Canadians. Demonstrations on Parliament Hill by students protesting against the war in Viet-Nam; 40 found guilty May 19 of disturbing the peace and

all but eight spent two days in jail rather than pay \$15 fines. Prime Minister Pearson made an unprecedented telephone call to George Victor Spencer, postal clerk dismissed because of alleged espionage activities, in Vancouver; Spencer's complaint that he was not given fair treatment was confirmed; on Mar. 7, Hon. Mr. Justice D. C. Wells of Toronto appointed commissioner to inquire into his complaints. Studebaker of Canada Limited announced abandonment of automobile production after 114 years in operation. Justice Minister Cardin announced the organization of a special squad of investigators and accountants to track down fraudulent bankruptcies. *Mar. 6*, Connaught Park Raceway grandstand, landmark near Hull, Que., destroyed by fire. *Mar. 9*, Mrs. Viola MacMillan committed for trial on charges of manipulating trading in shares of Consolidated Golden Arrow Mines Ltd.; similar charges against George MacMillan dismissed. *Mar. 10*, The Canadian Government announced plans for drawing up guidelines for U.S. subsidiaries in Canada counter to those set up by the U.S. Government last December. *Mar. 11*, The 100th anniversary of the union of the colonies of Vancouver Island and the Mainland marked in Victoria. *Mar. 12*, National Hockey League scoring record broken by 51st goal of Bobby Hull of Chicago Black Hawks. *Mar. 13*, Death of Robert A. Emerson, President of the CPR, in Montreal. *Mar. 14*, Bank interest increased from 4½ p.c. to 5½ p.c. Supreme Court Judge Wishart Flett Spence appointed to head a Royal Commission of inquiry into the case of Gerda Munsinger. Canada's first shipment of potash to Europe left Vancouver for Rotterdam. *Mar. 16*, U.S. astronauts Armstrong and Scott made an emergency landing in the Western Pacific Ocean after trouble developed in spacecraft. Two U.S.S.R. dogs returned safely to earth after 22 days in orbit in the satellite *Cosmos 110* at a greater height than achieved by any astronaut. *Mar. 17*, A \$112,000,000 federal program to improve Canada's Indian reserves announced, the money to be spent on housing, water supply, sanitation facilities, electrification of homes and improved roads. *Mar. 18*, Pope Paul VI lifted the excommunication of Roman Catholics married outside their church and abolished the mixed marriage pledge by non-Catholics to raise children in the church. *Mar. 24*, Canada won the Scotch Cup international curling championship at Vancouver. An agreement between the Quebec Government and the Provincial Civil Servants Union, providing wage and salary increases, averted a threatened strike of 41,000 employees. *Mar. 26*, Bob McLean of Vancouver, Canada's 1965 car-racing champion, killed in a race at Sebring, Florida. *Mar. 27*, The first all-Canadian space project began with the launching of a 350-lb. scientific instrument package on a *Black Brant* rocket from the Churchill research range; its purpose is to probe the aurora borealis and upper atmosphere. *Mar. 29*, Dow Brewery Ltd., of Quebec, Que., announced intention to destroy 1,000,000 gallons of beer following the deaths of 16 area men with cardiac troubles who had consumed large quantities of beer. Death of Senator Allan Lee Woodrow, in Toronto. *Mar. 30*, France announced plans to withdraw from NATO and requested removal of U.S. and Canadian military installations. Death of Senator F. Gordon Bradley, in Bonaville, Nfld. Trial of Raymond Denis on charges of corruptly offering money to Pierre Lamontagne, acting on behalf of the U.S. Government in opposing bail for Lucien Rivard, declared a mistrial by presiding Judge Costello; a new trial expected.

**April:** *Apr. 4*, Announcement that Canada will assist Kenya in a five-year \$350,000 project to increase wheat production. External Affairs Minister Martin announced, as an aid measure, Canada's forgiveness of the remaining payments by India on two loans made in 1958 for purchase of Canadian wheat and flour. *Apr. 5*, Announce-



ment of an enlarged long-term agreement to sell wheat to Communist China to the amount of \$550,000,000 over the next three years. The House of Commons, in a free vote, rejected the abolition of the death penalty for convicted murderers. *Apr. 6*, Prime Minister Pearson outlined plans to promote bilingualism among public servants, to include higher pay for positions requiring both languages, language training and establishment of a Special Secretariat on Bilingualism. An expanded Office of Canadian Affairs established within the U.S. State Department. *Apr. 7*, John Hunter Campbell, former Ontario Securities Commission director, acquitted on a charge of breach of trust involving share trading in Windfall Oils and Mines Ltd. and Chesterville Mines Ltd. stocks. *Apr. 9*, George Victor Spencer, who was dismissed from the federal Civil Service on suspicion of espionage activities, found dead in his home in Vancouver; death ruled due to natural causes. *Apr. 11-17*, Named to the News Hall of Fame during National Press Week: the late John W. Dafoe, former editor of the *Winnipeg Free Press*; Arthur Ford, former vice-president and editor-in-chief of the *London Free Press*; and Gérard Filion, former editor of *Le Devoir*. *Apr. 13*, The U.S.S.R. inaugurated its first North Atlantic passenger liner service with the departure of the *Alexandr Pushkin* from Leningrad for Montreal. *Apr. 14*, Carl Willis, Charlottetown, P.E.I., won the Canadian plowing championship at Chilliwack, B.C. *Apr. 15*, CBC President J. Alphonse Oumet announced that Patrick Watson and Laurier LaPierre, co-hosts on the controversial program *This Hour Has Seven Days*, would be replaced. Seven men found guilty in Montreal of participating in the \$1,400,000 mail robbery of Mar. 31, 1964; sentenced *Apr. 22* to 25 and 35 years imprisonment. Edmonton Oil Kings defeated Oshawa Generals in junior hockey finals to win the Memorial Cup. *Apr. 16*, Drumheller Miners defeated Sherbrooke Beavers in senior hockey to win the Allan Cup. Premier Ian Smith of Rhodesia announced his country's decision to sever remaining diplomatic ties with Britain, and ordered the closure of the British Mission in Salisbury and Rhodesia House in London. *Apr. 17*, Five-day strike of construction workers affecting all construction projects on Montreal Island except Expo 67 ended with acceptance of a three-year contract. *Apr. 20*, Alex Colville, Sackville, N.B., awarded \$9,000 for his set of designs to appear on Canadian Centennial coins. *Apr. 22*, Yvon Dupuis, St. Jean, Que., former federal Minister without Portfolio, found guilty of peddling influence in trying to obtain a racetrack permit. *Apr. 23*, A gold-covered Bible presented to the management of Toronto's Royal York Hotel, marking the 5,000,000th Bible placed in circulation by the Gideons International Movement. *Apr. 26*, Approval given by the federal Cabinet to the Supreme Court of Canada review of the case of Steven Truscott, whose conviction seven years earlier at age 14 for the strangling of 12-year-old Lynne Harper and subsequent sentence to death was the subject of a book by Mrs. Isabel LeBourdais in which it was contended that he was a victim of a miscarriage of justice. *Apr. 30*, Plans announced for the development by the National Capital Commission of a large marine-recreation complex on the Quebec side of the Ottawa River across from the Rideau Falls, to be called Portage Champlain and completed in June 1967.

**May:** *May 1*, Ceremonies commemorating the Battle of the Atlantic conducted at the National War Memorial in Ottawa. Threatened strike of CBC producers over the dispute regarding the *Seven Days* program suspended with the appointment of Vancouver Sun publisher Stuart Keate as mediator. End of 14-week strike of members of the Teamsters union that disrupted transport across Ontario; a pay increase of 70 cents an hour and the establishment by stages of a 40-hour week granted. *May 2*, A three-week strike of teachers

in provincial schools in Quebec ended with the signing of a new contract; the union demand that legal action against 13 of its leaders be withdrawn was not acceded to. *May 3*, Wilno, Ont., the oldest Polish community in Canada, celebrated the 1,000th year of Christianity in Poland. Dr. A. E. Porsild, chief botanist of the National Museum of Canada, awarded the Massey Medal for his contributions to knowledge of the Canadian Arctic. Dr. E. Irving, Dominion Observatory geologist, awarded a gold medal by the Mining, Geological and Metallurgical Institute of India for his work in the geology of Gondwanaland. *May 4*, Appointment of Dr. Jean Sutherland Boggs as first woman Director of the National Gallery of Canada. Ian Sinclair, Montreal, elected president of the CPR. *May 5*, One killed and three injured in bomb explosion at a strike-bound shoe manufacturing plant in Montreal; six members of Front de Libération du Québec committed for trial on Nov. 19 on charges of non-capital murder. The Montreal Canadiens won the Stanley Cup, symbol of hockey supremacy, over Detroit Red Wings. Mr. Justice Dalton Wells, commissioner inquiring into the George Victor Spencer case, released a transcript of evidence given at hearings held in Ottawa *Apr. 13-15*. *May 6*, H.M. Queen Elizabeth II officially opened the new Commonwealth Building of London's pioneering post-graduate medical school; Canadians contributed £300,000. *May 7*, Final report of the Parent Royal Commission on Education in Quebec made public; its 74 recommendations include provision for non-denominational education, local school re-organization and creation of an Indian education service. *May 9*, China detonated its third nuclear bomb. Longshoremen in Montreal, Trois-Rivières and Quebec went on strike for the second time in three weeks, again over a dispute regarding parking privileges. *May 9-July 29*, About 1,600 professional civil servants in Quebec on strike to support their demand for increased salaries. *May 10*, Resignation of Nelson Castonguay as Chief Electoral Officer. *May 12*, An Act to establish a Science Council of Canada given Royal Assent. The new flag of Manitoba raised on the 96th anniversary of the creation of the province. *May 13*, Hon. J. C. A. Cameron appointed Chairman of the Board of Conciliation established to deal with the dispute involving 22,000 non-operating CNR employees. *May 17*, Announcement that the Federal Government-sponsored Medicare will begin July 1, 1967 in the provinces prepared to co-operate. *May 18*, Paul Joseph Chartier, 45, Bonneyville, Alta., killed in the premature explosion in a washroom of the Parliament Buildings, Ottawa, of a homemade bomb which he evidently intended to throw onto the floor of the House of Commons from the public gallery. *May 25*, The Bahamas changed their currency from sterling to the decimal system. *May 26*, Guyana, formerly British Guiana, after 135 years of British rule became an independent nation and the 23rd member of the Commonwealth. *May 30 and July 11*, Provincial election held in Prince Edward Island resulted in defeat of the Progressive Conservative Party; Hon. Alex B. Campbell became Canada's youngest premier; party standing was 17 Liberals and 15 Progressive Conservatives. *May 31*, The 1965 Governor General's literary awards made to: Alfred Purdy (poetry in English); James Eayrs (non-fiction in English); André S. Vachon (non-fiction in French); Gilles Vigneault (poetry in French); and Gérard Bellet (fiction in French).

**June:** Dr. Helen K. Mussallem, Executive Director of the Canadian Nurses Association, received award of the Teachers College Nursing Education Alumni Association for distinguished achievement in nursing research and scholarship; presentation was made at the annual dinner of the American Nurses Association in San Francisco. *June-July*, Ceremonies in France commemorating the 50th anniversary of Canadian participation in the



Battles of the Somme in 1916. *June 1*, Senator Mariana Jodoin, 84, Montreal, Senator Thomas Alexander Crerar, 89, Winnipeg, Senator Clarence Veniot, 80, Bathurst, N.B., and Senator William H. Taylor, 76, Brantford, Ont., retired from the Senate. *June 2*, U.S. satellite *Surveyor I* launched May 30, landed on the moon and returned photos indicating that the surface seemed suitable for landings of manned craft. Unveiling of portrait of former Speaker Alan Macnaughton, painted by Lillias Newton of Ottawa, to be hung in the gallery of former Speakers in the Centre Block. *June 3-5*, Two U.S. astronauts in the *Gemini 9* rocket in three-day flight which included rendezvous with a target satellite and a walk in space, the latter cut short by defective faceplate. *June 5*, André Durocher, convicted holdup man and escape-mate of Lucien Rivard, found hanged in QPP Headquarters the day before he was to be charged with the deaths of André Paquette and Alice Rioux, whose bodies were found buried near Piedmont, north of Montreal. Provincial election in Quebec; Union Nationale Party under Daniel Johnson elected. Edwin Godfrey Newman, Bella Bella, B.C., became the first native Indian to be appointed a magistrate and judge of the family and children's court. *June 6*, The 75th anniversary of the death of Sir John A. Macdonald commemorated at Queen's Park in Toronto. \$12,000,000 bequest to the Canada Council from the late Dorothy J. Killam announced. *June 7*, The Presbyterian Church voted 133-72 in favour of ordination of women. Twenty-six of 27 men charged with criminal contempt for picketing a Peterborough plastics plant in defiance of a court order were found guilty. *June 8*, The Centenary of the first convening of Parliament in Ottawa noted by Rt. Hon. J. G. Diefenbaker in the House of Commons. *June 9*, First woman to hold the post of foreign ambassador to Canada, Dora Alencar de Vasconcellos of Brazil, arrived in Ottawa. *June 10*, The federal Department of Justice announced launching of investigation into alleged multi-million-dollar credit frauds by some bankrupt firms. Agreement signed by the CPR and the National Harbours Board ended 30-year legal argument over ownership of Vancouver's waterfront and paved the way for redevelopment of the area. *June 11*, Dave Bailey, Toronto, became the first Canadian to break the four-minute mile (3:59.1). At Springfield, Ill., Prime Minister Pearson received one of the 1966 Atlantic Union Pioneer Awards for leadership in uniting NATO countries into a federal union. *June 12*, Death of Daniel Leo Dolan, career public servant and diplomat who organized and became Director of the Canadian Travel Bureau. *June 13*, Dr. Geoffrey Hattersley-Smith of the Defence Research Board presented with a Royal Geographical Society gold medal for his glaciological investigations in the Canadian Arctic. *June 14*, The 39-day strike of Quebec longshoremen, halting operations in the ports of Montreal, Quebec and Trois-Rivières, ended with the granting of a 34-p.c. increase and establishment of a federal inquiry to negotiate other problems. *June 15*, Mr. Justice Meunier of the Quebec Superior Court, convicted of perjury in 1964, granted a new trial by the Quebec Appeal Court. External Affairs Minister Martin confirmed in the House of Commons that Chester Ronning, retired diplomat and expert on Far Eastern affairs, was on a mission for the Federal Government believed to be connected with possible peace negotiations in North Viet-Nam. *June 16*, A strike of 4,253 sales employees of Air Canada that threatened to ground the airline averted by a last-minute wage settlement. Threatened strike of St. Lawrence Seaway operating employees averted by an agreement increasing wages by 20 p.c. retroactive to Jan. 1 and an additional 10 p.c. in 1967. *June 19*, Ceremony held in Toronto marking 75th anniversary of the first Ukrainian settlers in Canada. *June 20*, Conclusion of a \$800,000,000 contract between Canada and the

U.S.S.R. for the purchase of Canadian wheat and flour announced. *June 21*, Designation of the birthplace of Col. John McCrae, author of the poem *In Flanders Fields*, at Guelph, Ont., as a national historic site; to be restored in co-operation with the City of Guelph. *June 22*, Senator Keith Davey accepted the commissionership of the Canadian Football League. *June 23*, Provincial election held in Manitoba; Premier Duff Roblin's Progressive Conservative government returned for a fourth term. *June 25*, Titled Hero, Canadian-bred horse owned by Peter K. Marshall, Toronto, won Queen's Plate. *June 27*, Russian parliamentarians led by Dmitry Polyansky began 10-day visit to Canada.

*July: July 5*, The late Busher Jackson and Fred Cook elected to Hockey Hall of Fame. *July 6*, Prime Minister Pearson announced grants and development loans to Commonwealth countries in the Caribbean to the extent of \$71,000,000 over five years. *July 6-8*, Canada-Commonwealth Caribbean Conference held in Ottawa. *July 7*, A Bill to incorporate the Bank of Western Canada—Canada's ninth bank and the first new Canadian-financed bank in 50 years—passed by the Senate. *July 8*, Eleven staff members of *This Hour Has Seven Days* left or were dismissed by the CBC. *July 9-10*, Memorandum of Association signifying the union of the two largest Civil Service staff associations—the Civil Service Federation and the Civil Service Association and their affiliates—with a membership of some 115,000, signed. *July 11*, Death of Gen. A. G. L. McNaughton, scientist, former President of the National Research Council, Commander of the first Canadian Army Overseas in World War II and Canadian Chairman of the International Joint Commission. *July 12*, Agreement signed between Canada and Trinidad and Tobago under which Canada will supply modern port-handling equipment up to an amount of \$350,000 to Port-of-Spain. *July 13*, Loan agreement signed making \$600,000 available for the expansion of the school system in Jamaica. Parliamentary Committee on Consumer Credit given a special mandate to investigate living costs; study opened Sept. 28, with food prices the first topic of inquiry. *July 14*, Mrs. J. E. Ahern of Halifax appointed judge of the Halifax Citizenship Court, the first woman to be appointed to such office in Canada. *July 16*, An Act to set up a Crown agency to operate the \$36,000,000 National Arts Centre in Ottawa received Royal Assent. Four Rear Admirals confirmed their requests for early retirement in the dispute with Defence Minister Hellyer over integration of the Armed Forces. *July 15-18*, Non-medical workers at Quebec hospitals, including seven in the Montreal area, went on strike, demanding increased wages and a new work contract. *July 18*, Federal grant of \$2,000,000 to the endowment of the Vanier Institute of The Family approved. *July 21*, George and Viola MacMillan, prominent figures in the Canadian mining industry, committed for trial on two charges each of fraud in influencing the market price of Windfall Oils and Mines shares. *July 22*, U.S. astronauts completed a three-day trip in *Gemini 10* after setting an altitude record and achieving the first dual rendezvous. *July 25*, Farmers in various parts of Ontario obstructed highway traffic with tractors in demonstrations of protest against provincial agriculture policies; others on July 27 marched to the Legislative Buildings. Martine van Hamel, Toronto, won junior class of international ballet competition in Bulgaria. External Affairs Minister Martin announced an additional grant in aid available to Zambia to help with "the economic problems resulting from actions of the Smith regime in Rhodesia". *July 26*, Report of Mr. Justice Dalton Wells found George Victor Spencer, former federal postal clerk, guilty of gross misconduct in supplying information to Russia and that the government of this country would have been culpable if they had

not discharged him; the report stated that he had been treated with forbearance and fairness. *July 31*, The Union Station in central Ottawa closed after 57 years of operation; a new station in the Alta Vista area came into use. 9,000-ft. Mount William Booth in the Ram Range of the Rocky Mountains named in honour of the founder of the Salvation Army in commemoration of the Army's centennial year.

**August:** *Aug. 2*, Express handlers in Montreal and Toronto began a wildcat strike; the railways imposed embargoes on express and small goods shipments. Six of the eight provinces represented at the Premiers' Conference in Toronto rejected the proposed federal medicare scheme scheduled to come into effect July 1, 1967. Long-distance telephone service inaugurated between Inuvik, N.W.T., and the "outside" world. *Aug. 3*, The Riot Act read to more than 250 transient tobacco workers in Delhi, Ont., demonstrating against the accommodations provided; nine arrested on charges of causing a disturbance and unlawful assembly. *Aug. 4*, Gen. J. V. Allard, Chief of the Canadian Defence Staff, announced the formation of an Armed Forces Council composed of senior officers at Headquarters in Ottawa and the Commanders of all six Commands to consider the steps by which integration and unification of the Forces will be carried out; first meeting held *Aug. 10*. Non-medical workers in Quebec hospitals returned to work following acceptance of a new 30-month contract and an 18-p.c. wage increase. *Aug. 4-8*, A wildcat strike at the Steel Co. of Canada Ltd. plant in Hamilton, Ont., in protest against slow contract negotiations put 16,000 persons out of work; violence and 29 arrests took place during the interval; later the workers rejected a contract offer that would have made them the highest paid steel workers in the world by *Aug. 1*, 1967. *Aug. 7*, Ceremony at Lethbridge, Alta., commemorating the first flight over the Canadian Rockies in 1919; Ernest C. Hoy, who made the flight from Vancouver to Lethbridge in 14 hours 8 minutes, attended. *Aug. 8*, Death in Toronto of Edith M. Mairs, 93, organizer of the Girl Guide Movement in Canada. *Aug. 10*, Collapse of the \$2,500,000 Heron Road Bridge under construction over the Rideau River in Ottawa which killed eight persons and injured more than 50. World Bridge trophy won by Brian Pauls of Winnipeg. *Aug. 13*, Eighth British Empire Games closed in Kingston, Jamaica; of 1,037 athletes from 35 countries, the 108 Canadian contestants won 14 gold medals, 20 silver medals and 23 bronze medals, and established two world records. *Aug. 17*, A Book of Paris fashions from 1797 to 1897, a Centennial gift from Mme Héloïse Gauthier in memory of her daughter, Solange Karsh, presented to the National Library. *Aug. 19*, Georges Lemay, publicized by the *Early Bird* satellite as Canada's most wanted fugitive who was captured and later escaped from the Dade County Jail in Miami in September 1965, arrested at Las Vegas, Nevada. Mr. Justice Ivan C. Rand, retired Justice of the Supreme Court of Canada, appointed to head Ontario's Royal Commission of inquiry into the use of injunctions in labour disputes. *Aug. 21*, Laying of cornerstone of Visitors Pavilion at Roosevelt-Campobello International Park, New Brunswick, attended by U.S. President Johnson and Prime Minister Pearson. *Aug. 24*, Original handwritten manuscript of *Sunshine Sketches of a Little Town*, by Stephen Leacock, presented to the Stephen Leacock Memorial Home at Orillia after its purchase for \$20,000. *Aug. 25*, The Canadian Union of Postal Workers announced demands for a 50-p.c. increase in pay for postal workers with the threat of a strike if not granted. *Aug. 26*, About 118,000 railway workers belonging to 17 unions went on strike across Canada in support of wage increases averaging 30 p.c.; telecommunications, air express and all but first class mail were shut down and ferry service to Prince Edward Island was halted;

Parliament recalled *Aug. 29* to deal with the strike. *Aug. 27*, Death in Toronto of J. B. McGeachy, well-known radio and television personality and newspaperman. *Aug. 29*, Report of Mr. Justice Rand into the involvement of Mr. Justice Leo Landreville in stock dealings of Northern Ontario Gas Co., tabled in the House of Commons; his findings ruled Mr. Landreville unfit for office. Gilles Grégoire, M.P. for Lapointe, announced his decision to sit as an independent member after accepting the presidency of a Quebec separatist party. *Aug. 31*, Death of Alexis Caron, M.P. for Hull, Que.

**September:** *Sept. 1*, Royal Assent given to Bill ending seven-day strike of railway workers; interim wage increases totalling 18 p.c. granted and provision made for compulsory arbitration. *Sept. 4-15*, Commonwealth Prime Ministers' Conference held in London; Rhodesia was principal topic of discussion. *Sept. 6*, Prime Minister Hendrik Verwoerd of South Africa assassinated in House of Assembly; John Vorster succeeded him as Prime Minister *Sept. 13*. *Sept. 8*, Provincial election in Newfoundland; Liberal Party under Premier Smallwood returned to office for the sixth time with his greatest majority. Postponement of the national medicare plan until July 1, 1968 announced. The Saskatchewan Government passed the Essential Services Emergency Act at a special session of the Legislature providing for compulsory arbitration without appeal in labour disputes involving workers in essential services. *Sept. 10*, The United Church of Canada approved principles of union with the Anglican Church. *Sept. 12*, Provincial election in British Columbia; Social Credit Party under Premier W.A.C. Bennett returned to office. The CNR and CPR announced a 10-p.c. increase in freight rates. *Sept. 12-23*, American Regional Conference of the International Labour Organization held in Ottawa, the first time outside of Latin America. *Sept. 14*, Dr. Gilbert C. Monture, Ottawa, awarded the Vanier Medal by the Institute of Public Administration for his "public service in Canada and abroad". *Sept. 14-15*, Federal-provincial conference of finance ministers held in Ottawa; discussion centred on a new tax-sharing formula. *Sept. 15*, U.S. astronauts in *Gemini 11* completed a three-day space flight in which former records of height, speed and docking with a target satellite were exceeded. Hugh MacLennan, Montreal, and George-Henri Levesque, Lac St. Jean area, presented with \$15,000 Molson prizes for outstanding achievement in the arts, humanities and social sciences. Death in Toronto of Leonard W. Brockington, noted lawyer and public servant. *Sept. 19*, Simonie E7-551, Frobisher Bay, became the first member of the Eskimo race to be elected to the Council of the Northwest Territories in the first territorial election held in the Eastern Arctic. President Leopold Senghor of Senegal arrived in Ottawa at the invitation of the Governor General of Canada for a 10-day visit. *Sept. 20*, Agreement signed by Federal and New Brunswick Governments for expenditure of about \$114,000,000 during the next ten years in a comprehensive war on rural poverty. The 21st session of the UN General Assembly opened under the chairmanship of External Affairs Minister Martin. *Sept. 22*, Cuban embassy in Ottawa rocked by shots from a bazooka-type gun believed to have been fired by Cuban nationalists. *Sept. 23*, Death in Ottawa of Senator Charles L. Bishop. *Sept. 23-Oct. 5*, Twelfth Commonwealth Parliamentary Association Conference held in Ottawa; nearly 200 delegates attended; Rhodesia problem paramount. *Sept. 29*, Pay increase of 13.8 p.c. announced for the Armed Forces. Eight persons arrested when \$3,000,000 worth of heroin was seized in Montreal. Four labour leaders jailed for contempt of court during demonstrations in May at the Lenkurt Electric Co. plant in Burnaby, B.C.



**October:** *Oct. 1,* Television broadcasting in colour inaugurated. *Oct. 2,* Dr. Rowena G. D. Hume, 88, Canada's oldest woman doctor, murdered in her Toronto home. *Oct. 6,* Report of the Spence Commission on the Munsinger affair tabled in House of Commons; although no actual breach of security was evident, the affair was regarded as a "startling" security risk to Canada and former Prime Minister Diefenbaker was censured for retaining Mr. Sévigny in the Cabinet and former Justice Minister Fulton for not investigating the case further; the present Government was exonerated and all allegations by Justice Minister Cardin in the House of Commons were substantiated. *Oct. 6,* Housewives in Ottawa area began a boycott of supermarkets in protest against high food prices; similar action was taken in other parts of Canada. The Quebec Cabinet approved the signing of a 40-year agreement between Hydro-Quebec and British Newfoundland Corporation whereby Quebec will purchase power from the Churchill Falls hydro-electric project in Labrador. The Carruthers report on the Northwest Territories tabled in the House of Commons; postponement of provincial status recommended. *Oct. 7,* Resignation of J. Alphonse Ouimet as President of the CBC announced by Prime Minister Pearson; to take effect after parliamentary approval of revised Broadcasting Act. A bus-train collision in Dorion, Que., killed 19 persons, almost all teenagers. Prime Minister Pearson announced that the South Saskatchewan Dam, soon to be completed, will be designated the Gardiner Dam in honour of the late Rt. Hon. James Garfield Gardiner, a former Premier of Saskatchewan, and federal Minister of Agriculture for 22 years. *Oct. 11,* Report of the committee study of election expenses, commenced in 1964, tabled in the House of Commons; recommendations included full disclosure of election spending by parties and candidates, equal free broadcast time to all national parties within the four weeks preceding election, limited mailing subsidies, spending limit of 10 cents an elector on advertising by an individual candidate, etc. *Oct. 13,* \$1,000,000 mail robbery at Montreal International Airport. Eleven died in explosion and fire in Monsanto Canada Ltd. chemical plant in Montreal. *Oct. 14,* White Paper on Immigration tabled in the House of Commons; designed to remove discrimination and extend sponsorship privileges. *Oct. 17,* Montreal's first subway, the Metro, went into public use. Ontario's first community college, Centennial College of Applied Arts and Technology, opened in Scarborough. *Oct. 18,* Hon. Lionel Chevrier, High Commissioner for Canada in London, appointed Commissioner-General of State Visits in 1967; Lt.-Gen. Howard Graham to co-ordinate Royal Visits and Lt.-Gen. Robert Moncel to co-ordinate visits of Heads of State. *Oct. 19,* Announcement of agreement between Britain and Canada for sale of uranium oxide from the Elliot Lake area in Canada during the 1970s. Report of the Royal Commission of inquiry into working conditions in the Post Office Department tabled in the House of Commons; widespread improvements in working conditions and new attitudes toward employer-employee relations recommended. Approval for construction of the first stage of the Mines Research Establishment near Ottawa announced; first contract awarded Oct. 26. *Oct. 21,* Coal mine slag heap in Aberfan, Wales, buried a school and several homes, killing 116 children and 28 adults. *Oct. 24,* Canada's first satellite communications station, SATCOM, began commercial operations near Mill Village, N.S. Twenty-first anniversary of the United Nations. *Oct. 24-28,* Federal-provincial premiers fiscal conference held in Ottawa; concessions to provinces for next year include about \$150,000,000 more in equalization grants and about \$150,000,000 more in aid to education. *Oct. 26,* The Appeal Court of Ontario upheld the convictions of 26 union members for contempt in picketing Tilco Plastics plant in Peterborough.

*Oct. 27,* The UN General Assembly voted to end South Africa's mandate over South West Africa. *Oct. 30,* Death of John Drainie, Toronto, outstanding Canadian radio, stage and television actor.

**November:** *Nov. 1,* INCO announced plans to more than double the production of nickel in the Thompson area of Manitoba, expenditures to be about \$100,000,000. The Canadiana Room, a collection of early Canadian art, handicrafts and furniture assembled by Prime Minister and Mrs. Pearson in the official residence, officially opened by Mrs. Pearson. *Nov. 3,* Mr. Justice E. M. Hall, Chairman of the Royal Commission on Health Services, presented with the Bronfman prize for 1966 of the American Public Health Association for public health achievement. *Nov. 4,* Floods devastated northern Italy, submerging Florence and Venice; 100 drownings reported and untold damage done to priceless works of art. Air service between Montreal and Moscow began; agreement signed by Canada and the U.S.S.R. *July 11,* Prime Minister Pearson announced a gift of \$100,000 to the UN Children's Fund in memory both of the children of Aberfan and of Dorion who died in an accident *Oct. 7.* *Nov. 10,* Mr. Justice André Montpetit appointed mediator in dispute between the Federal Government and postal employees in an effort to avert a Christmas mail strike; settlement effected *Nov. 15* by a 25-cent-an-hour pay increase and a contract to the end of *July 1967.* *Nov. 11,* Canada elected to a two-year term on the UN Security Council. *Nov. 11-19,* Royal Agricultural Winter Fair held in Toronto; Larry Hixt of Beiseker, Alta., won world championship wheat title for second straight year; James Day, Oak Ridges, Ont., on Canadian Club won the *Prix des Nations* in the international horse-show jumping competitions; and David Hasson, Ariss, Ont., won the Queen's Guineas for his Aberdeen Angus steer. *Nov. 13,* Death in Quebec City of Mme Louis St. Laurent, wife of former Prime Minister St. Laurent. *Nov. 14,* Flight of U.S. astronauts in *Gemini 12* completed *Gemini* series designed to determine man's physical limitations in orbit. Increases in disability pensions and war veterans allowances announced. *Nov. 14-28,* First strike in the 29 years of Air Canada by machinists and auxiliary workers; flights resumed following new contract increasing wages 20 p.c. and fringe benefits 7 p.c. *Nov. 16,* Prime Minister Pearson announced the appointment of a Royal Commission headed by M. W. Mackenzie, former Deputy Minister of Trade and Commerce, to conduct an investigation into Canada's national security. Death at St. John's, Nfld., of Dr. Cluny Macpherson, 87, credited with inventing the first gas masks used by Allied troops in World War I. *Nov. 17,* The UN General Assembly called on Britain to end rebellion of Rhodesia, using force if necessary. *Nov. 21,* Bower Edward Featherstone, a Federal Government employee in the Mapping and Survey Section of the Department of Energy, Mines and Resources, charged with obtaining and retaining copies of a confidential chart relating to Canada's maritime defence. *Nov. 22,* Canada Council Medals for contributions to Canadian arts, humanities and social sciences presented to Morley Callaghan, author; W. A. Mackintosh, economist; Norman McLaren, film-maker; and Jean-Paul Riopelle, painter. *Nov. 23,* The Ontario Securities Commission began an investigation into the financial affairs of Prudential Finance Corp. Ltd., now under the control of a trustee. *Nov. 25,* Canada to contribute \$500,000 to a special Canadian Fund for aid to the people of Italy suffering from disastrous floods; public subscriptions invited. Riots in Vancouver on the eve of Grey Cup game. *Nov. 26,* The Saskatchewan Roughriders won the Grey Cup for the first time, defeating Ottawa Rough Riders 29-14. *Nov. 29,* At inquest into deaths of nine workers, deficiencies in the supporting wooden framework blamed for



the collapse of Heron Road Bridge on Aug. 10; O. J. Gaffney Construction Co. of Stratford and M. M. Dillon Consulting Engineer Co. of London held responsible. *Nov. 30*, Barbados became an independent nation within the Commonwealth after 339 years of British rule.

**December:** *Dec. 1*, Death of Senator Stanley S. McKen of Vancouver. *Dec. 2*, Joseph B. Brien, President of insolvent Prudential Finance Corp., arrested on theft, forgery and uttering charges. U Thant reappointed Secretary General of the UN for a five-year term. Death in Toronto of Ralph Allen, war correspondent, author and editor. *Dec. 8*, B.C. longshoremen's strike ended after three weeks. *Dec. 10*, Canadian women's curling team from Unionville, Ont., skipped by Mrs. Helen Jewett, won the world championship in Scotland. *Dec. 14*, Royal Assent given to Act to Incorporate the Bank of British Columbia. Presentation of the first Outstanding Achievement Award of the Public Service of Canada to Dr. Wilfrid Bennett Lewis, senior Vice-President (Science) of Atomic Energy of Canada Limited, by Mme Georges P. Vanier at Government House. *Dec. 16*, Threatened strike of air traffic controllers scheduled for Dec. 20 averted by agreement of Federal Government to pay salary increases averaging 13 p.c. *Dec. 19*, Finance Minister Sharp announced a 1-p.c. increase in the federal sales tax and higher payments for those in the higher income brackets for Old Age Security Tax. *Dec. 20*, Report of the Commons-Senate Special Joint Committee on Credit and Prices tabled in the House of Commons; recommendations include establishment of a government Department of Consumer Affairs, more simplified information concerning consumer prices and wider consumer education. *Dec. 21*, The Medical Care Act received Royal Assent; to come into effect July 1, 1968. An amendment to the Old Age Security Act received Royal Assent; provides for an additional \$30 a month to needy persons on the \$75 old age pension. Eight children died in the collision of a school bus and a sand truck near Windsor, Ont. Death in Toronto of Capt. Merton Wesley Plunkett, who organized the World War I entertainment group known as the Dumbells. *Dec. 23*, Premier Thatcher of Saskatchewan announced that the farm home near Borden, Sask., where former Prime Minister John Diefenbaker spent his early childhood, will be moved to Regina and restored as part of the Wascana Centre as a tribute to the only Saskatchewan citizen to become Prime Minister of Canada. Isabel LeBourdais, author of *The Trial of Steven Truscott*, named Woman of the Year by Canadian Press women editors. *Dec. 29*, Under a federal-provincial program for transforming the economic base of Cape Breton Island, the remaining coal mines in that area will be phased out gradually and new industry brought in. *Dec. 31*, Report on graduate studies and research in Ontario recommended that Ontario's 14 provincially supported universities be amalgamated into one institution with many campuses. Retirement of Donald Gordon as President of Canadian

National Railways after holding office for 17 years. Canada's Centennial Year ushered in with a ceremony on Parliament Hill in which Prime Minister Pearson ignited the Centennial Flame inside the main entrance to Parliament Hill.

## 1967

**January:** *Jan. 1*, Mme Georges P. Vanier, wife of the Governor General, dedicated Canada's Centennial Train at Ottawa prior to its departure for Victoria where it began, on Jan. 9, an 83-stop tour of Canada. *Jan. 4*, Dr. Helen Hogg, University of Toronto, awarded the Rittenhouse Silver Medal by the Rittenhouse Astronomical Society for her study of variable stars; she was the first Canadian and the second woman to receive the honour. *Jan. 5*, Death of David Roger Mitchell, M.P. for Sudbury. Federal proclamation that Jan. 11, 1967, the birthday of Sir John A. Macdonald, be commemorated across Canada in observance of his place in history as one of the Fathers of Confederation and the first Prime Minister of Canada. *Jan. 9*, Hon. Walter L. Gordon reappointed to the Federal Cabinet. Death in Winnipeg of Manitoba's Lieutenant-Governor, Hon. Errick F. Willis. *Jan. 11*, Canada's tallest and newest hotel, the 38-storey Chateau Champlain in Montreal, officially opened. *Jan. 13*, Nancy Greene, Rossland, B.C., won the Swiss international ski championship. *Jan. 14*, Large-scale strike by Roman Catholic elementary and secondary school teachers closed hundreds of schools in Montreal and Trois-Rivières; Mr. Justice André Montpetit of Quebec Superior Court appointed by the Quebec Government Jan. 17 as mediator. Death of Hon. J. L. Ilsley, former Minister of National Revenue, Minister of Finance and Minister of Justice. *Jan. 18*, Yellowknife, N.W.T., officially named capital of the Northwest Territories. *Jan. 23*, Special ministerial committee created to study the implications of foreign ownership and control of Canadian industry, headed by Hon. Walter L. Gordon. *Jan. 24*, The British Columbia Legislature opened its 28th Legislature at New Westminster in commemoration of the opening of the first session of the Legislative Council of the United Colony of British Columbia which merged the colonies of Vancouver Island and British Columbia in New Westminster one hundred years ago. *Jan. 27*, Col. Virgil Grissom, Lt.-Col. Edward White and Lt.-Cmdr. Roger Chaffee, crew of the U.S. *Apollo* spacecraft project, died in a fire on the launching pad. *Jan. 29*, Valerie Jones, Toronto, and Donald Knight, Dundas, Ont., won the Canadian senior singles figure-skating championships in Toronto. Explosions occurred at Yugoslav embassies and consulates in six North American cities, including Ottawa and Toronto; buildings were damaged but there were no injuries. *Jan. 30*, Bank of Canada interest rate reduced to 5 p.c. from 5½ p.c. City of Montreal clerical workers went on strike, closing down municipal courts, the social welfare department and the City Hall.

## APPENDIX I

### CONSTITUTION AND GOVERNMENT

Certain information given in Chapter II on Constitution and Government (closed off Oct. 1, 1966) is up-dated in this Appendix.

#### Page 85, Table 2

His Excellency General The Right Honourable Georges P. Vanier, D.S.O., M.C., C.D., died Mar. 5, 1967. The Hon. Roland Michener, P.C., Q.C., was appointed as the 20th Governor General of Canada on Apr. 4, 1967 and sworn in on Apr. 17, 1967.

#### Page 87, Table 4

On Jan. 9, 1967, the Hon. Walter L. Gordon was appointed Member of the Administration, precedence following the Hon. Paul Theodore Hellyer.

On Apr. 4, 1967, the Hon. Lucien Cardin resigned as Minister of Justice and Attorney General; the Hon. Guy Favreau resigned as President of the Queen's Privy Council for Canada; the Hon. Walter Gordon was appointed President of the Queen's Privy Council for Canada; the Hon. John Turner was appointed Registrar General of Canada; Pierre Elliot Trudeau, Parliamentary Secretary to the Prime Minister, was appointed Minister of Justice and Attorney General; and J.-J. Jean Chrétien, Parliamentary Secretary to the Minister of Finance, was appointed Member of the Administration.

#### Pages 88-89, Table 5

On Jan. 11, 1967, the Prime Minister announced that His Excellency the Governor General had approved his recommendation that the Premiers of the Provinces be appointed to be members of the Queen's Privy Council for Canada, to be sworn in at a later date.

The Rt. Hon. James Lorimer Ilsley died Jan. 14, 1967.

Mme Georges P. Vanier was appointed a member of the Queen's Privy Council for Canada on Apr. 11, 1967.

#### Pages 91-92, Table 8

The Hon. Douglas Everett was appointed Senator for Manitoba on Nov. 8, 1966. Senators appointed Apr. 6, 1967: the Hon. Maurice Lamontagne, P.C., Montreal. Que.; Mrs. R. A. Kinnear, Port Colborne, Ont.; Keith Laird, Q.C., Windsor, Ont.; and Andrew Thompson, Kendal, Ont.

The Hon. Adrian K. Hugessen resigned as Senator for Quebec on Jan. 1, 1967. The Hon. Stanley Stewart McKeen, Senator for British Columbia, died on Dec. 1, 1966; the Hon. William Rupert Davies, Senator for Ontario, died Mar. 11, 1967; and the Hon. Alexander Neil McLean, Senator for New Brunswick, died Mar. 12, 1967.

#### Pages 95-100, Table 10

R. Mitchell, Member of the House of Commons for Sudbury, Ont., died Jan. 5, 1967.

Footnote<sup>1</sup> (p. 96)—by-election for Hull electoral district had not yet been held at the date of going to press.

#### Page 118, Government of the Yukon Territory

R. G. Cameron retired as Commissioner, dated May 31, 1966, and James Smith was appointed Commissioner on Oct. 14, 1966.

#### Pages 118-119, Government of the Northwest Territories

B. G. Sivertz retired as Commissioner on Jan. 16, 1967; Deputy Commissioner Stuart M. Hodgson was appointed Commissioner and John H. Parker, Deputy Commissioner on Mar. 2, 1967.

An Act to amend the Northwest Territories Act (SC 1966-67, c. 22), which received Royal Assent on June 2, 1966, authorized the addition of three elected members to the Council of the Northwest Territories. The following were subsequently elected: Simonie, E7-551 for Eastern Arctic electoral district; Duncan Pryde for Central Arctic electoral district; and Robert Williamson for Keewatin electoral district.

On Jan. 18, 1967, Yellowknife became the capital of the Northwest Territories.

## APPENDIX II

### POPULATION

The statement was made on p. 182 that this Appendix would include as many of the population figures from the 1966 Census as were available at the time of going to press. However, it was found that the first 1966 Census data would not be ready for distribution for about two months following the cut-off date for inclusion of material in this volume. As stated in the Population Chapter, a list of publications of the 1966 Census is available, on request, from the Queen's Printer or the Dominion Bureau of Statistics.

Since the printing of the Population Chapter, population estimates by province as at June 1, 1966, have become available and elements of population growth from June 1, 1961 to June 1, 1966 are shown in the following table. Total population as of June 1, 1966 was estimated to be 19,919,000, an increase of 9.2 p.c. during the five-year period; this compares with a 13.4-p.c. increase between 1956 and 1961 and one of 14.8 p.c. between 1951 and 1956. The slowing down of the rate in the latest five-year period is partly accounted for by the marked drop in the birth rate in Canada from 26.1 to 21.4 per thousand population, reflecting the decrease in the number of births from 475,700 to 418,595.

The number of births over the whole 1961-66 period was about 2,250,000 compared with 2,362,000 in the previous census period, a decrease of 112,000. In the same comparison deaths were 45,000 greater, resulting in a decline in natural increase of 157,000. The falling-off in immigration in the later five-year period was even greater, being 539,000 compared with 760,000 in the previous period, and, because emigration was estimated to be about 30,000 greater in the 1961-66 period, the decrease in net migration was 251,000. It should be noted, however, that immigration has increased each year since the low point of 1961; in 1966 it reached a total of 194,743, more than two and a half times the 1961 figure.

Among the provinces, population growth over the 1961-66 period was especially marked in British Columbia where the increase of 233,000, or 14.3 p.c., was largely accounted for by the heavy movement of people from other provinces; net interprovincial population gain recorded by that province since 1961 was estimated at just over 100,000. The only other province showing a net gain in this period through interprovincial migration was Ontario, where it amounted to just over 50,000. Immigration was also an important factor in Ontario's population growth, which amounted to 659,000, or 10.6 p.c., since 1961; some 287,000 or a little over half of all immigrants to Canada between 1961 and 1966 settled in that province. Newfoundland also recorded an increase in population of just over 10 p.c. during 1961-66. The growth rates of Alberta and Quebec at 9.9 p.c. and 9.2 p.c., respectively, corresponded closely with the Canada rate but the Maritime Provinces, Manitoba and Saskatchewan all showed an average rate of increase of less than 1 p.c. per annum.

**Elements of Population Growth, June 1, 1961 to June 1, 1966**

Province	Population Census June 1, 1961	Births	Deaths	Natural Increase	Estimated Net Migration	Population Estimated June 1, 1966	Increase	
							No.	p.c.
	'000	'000	'000	'000	'000	'000		
Nfld.....	458	76	15	60	-13	505	48	10.3
P.E.I.....	105	14	5	9	-5	109	4	3.8
N.S.....	737	91	31	60	-37	760	23	3.1
N.B.....	598	77	24	54	-25	627	29	4.8
Que.....	5,259	646	189	457	+28	5,744	485	9.2
Ont.....	6,236	753	265	488	+171	6,895	659	10.6
Man.....	922	109	38	70	-34	958	36	3.9
Sask.....	925	112	37	76	-47	954	29	3.1
Alta.....	1,332	182	47	134	-2	1,464	132	9.9
B.C.....	1,629	181	77	104	+128	1,862	233	14.3
Y.T.....	14	3	1	2	-1	15	1	7.1
N.W.T.....	23	6	1	5	-2	26	3	13.0
<b>Canada.....</b>	<b>18,238</b>	<b>2,250</b>	<b>731</b>	<b>1,518</b>	<b>162</b>	<b>19,919</b>	<b>1,681</b>	<b>9.2</b>

<sup>1</sup> Less than 500.



# INDEX

NOTE.—This Index does not include references to Special Articles published in previous editions of the Year Book. These are listed at pp. 1236-1239.

## PAGE

Aborigines—see "Indians" and "Eskimos".	
Acadian forest region.....	509, 510
Accidents, motor vehicle.....	256, 261, 815-6
—on railways.....	794
Accounts, national.....	1068-80
Acts, federal, 1966-67.....	1247-53
—administered by Federal Depts.....	151-5
Adult education.....	345-6, 352, 353, 354, 364, 373
—offenders and convicts.....	414-24
Advertising agencies.....	907
Aerodromes.....	850
Aeronautical navigation, radio aids to.....	850-1, 878-9
African Assistance Plan, Special Commonwealth.....	179
Age of adult offenders.....	417, 422
—of immigrants.....	223
—of parents.....	247-8
—of population.....	194-5
Aged, services for.....	312, 315-6, 322-3
Agency corporations, Crown.....	143, 156, 162
Agricultural agreements, federal-provincial.....	445-7, 1053
—colleges and schools.....	468
—co-operatives.....	918, 920
—irrigation and land conservation.....	445-7
—land, areas of.....	441
—prices.....	475, 493, 494, 495, 498-9, 945
—production.....	473-8, 483-97, 505-7, 914
—Products Co-operative Marketing Act.....	926
—exports of.....	981
—grading and protection of.....	452, 456
—imports of.....	984
—marketing of.....	908-16, 923-8
—and Rural Development Act.....	445, 446-7
—research and experimentation.....	385-6, 390-1, 410, 449-51
—schools and colleges.....	468
—Stabilization Board.....	142, 144, 457-8
—statistics.....	469-503
—international.....	505-7
—of the Census.....	503-5
Agriculture.....	448-507
—Dept. of, Acts administered by.....	151, 453, 457-8, 460-2, 923-8
—conditional grants and shared-cost programs of.....	1053
—expenditure re.....	410, 1040
—functions of.....	130, 410, 445, 446, 449-58, 460-2
—farm loans.....	335-6, 458-9, 460-1
—income.....	469-73
—Federal Government in relation to.....	445-7, 449-62
—field crops, production and values of.....	474-8
—persons employed in.....	742, 744
—provincial governments in relation to.....	463-8
Air agreements, international.....	174, 843
—Canada.....	143, 144, 845-6
—Force, Royal Canadian, equivalent ranks.....	1171
—operations and training.....	1176-80
—rates of pay and allowances.....	1168-71
—Lines, Canadian Pacific.....	846
—foreign.....	848-9, 853
—independent.....	846-8
—mail.....	846, 852, 889
—personnel.....	853, 855
—services, current.....	845-52
—financial statistics of.....	846, 853, 854
—traffic.....	845-8, 852-3
—control.....	850-1
—Transport Board.....	130, 787, 854
—civil.....	838-55
Aircraft landing areas.....	849-50
—registered.....	855
Airfields, military.....	850
Airport activity.....	851-2

## PAGE

Alberta, admission to Confederation.....	82
—agricultural colleges and schools.....	468
—land.....	441
—produce, index numbers of.....	474, 498
—services.....	467-8
—Agriculture, Dept. of.....	467-8
—allowances for blind persons.....	316
—for disabled persons.....	317
—family.....	313
—mothers.....	322
—youth.....	314
—area.....	7, 34, 441
—births and birth rates.....	237, 243, 244, 250
—capital and repair expenditures.....	712
—construction industry.....	716, 717, 719
—co-operative associations.....	919
—deaths and death rates.....	237, 254, 260
—diseases, notifiable.....	306
—divorces.....	271
—earnings, average in industry.....	751, 757
—education—see "Education".....	
—electric power statistics.....	643, 647, 651-5, 662
—employment, index numbers of.....	750, 751
—and payrolls.....	163
—farm income.....	472, 473
—loans approved.....	459, 461
—statistics, Census.....	503-5
—field crops.....	476-8
—fisheries administration.....	620-1
—fishery products—see "Fisheries".....	
—forest resources—see "Forest".....	
—forested area.....	441, 511, 512
—forestry program.....	515, 532-3
—freight movement.....	921, 922
—government.....	105-6, 115-6
—debt.....	1062, 1063
—insurance.....	1164
—revenue and expenditure.....	1036-7, 1057-61
—health services.....	281-4, 290-7, 307, 308
—hospitals.....	281-4, 298-9, 301-2, 304
—immigrants—see "Population".....	
—irrigation and land conservation.....	445
—judicial convictions—see "Criminal and judicial".....	
—labour legislation.....	737-41
—lakes, principal.....	13
—libraries.....	378, 379, 380
—Lieutenant-Governor.....	115
—livestock.....	481, 916
—manufactures.....	689, 694
—marriages.....	237, 268
—mineral production—see "Mineral" and "Minerals".....	
—mining, provincial aid to.....	589
—laws—see "Mining".....	
—motor vehicle and traffic regulations.....	800-3
—mountains and other heights.....	18
—municipalities.....	119-20, 122, 123
—old age assistance.....	316
—security.....	312
—parks.....	34, 37-8, 45-6
—pipelines.....	855-9
—population—see "Population".....	
—representation in the House of Commons.....	93, 99
—in the Senate.....	91, 92
—Research Council of.....	403-4, 589
—roads and highways.....	804, 805, 806
—savings institutions.....	1134
—schools—see "Education".....	
—unemployment assistance.....	318
—insurance benefits.....	771
—water power of—see "Water Power".....	
—welfare services.....	320-4
—workmen's compensation.....	772-3
Alcoholic beverages, control and sale of.....	930-2
—taxes on.....	1028-9, 1030-1, 1035

	PAGE		PAGE
Allowances for blind persons.....	316	Aviation, civil, ground facilities.....	849-50
— for disabled persons.....	317	— personnel.....	853, 855
— Canadian Forces.....	1171	— radio aids to.....	850-1, 854, 878-9
— family.....	312-3	— traffic.....	845-8, 852-3
— and indemnities to members of the Senate and House of Commons.....	100-1	— weather services.....	75-6, 849, 877-8
— mothers'.....	321-2		
— veterans.....	330-1	Balance of international payments.....	1089-94
— youth.....	153, 313-4	Bank of Canada.....	144, 1118-21
Aluminum, production of.....	565	— Act and its amendments.....	151, 1118-21
Ambassadors, Canadian, abroad.....	164-8	— liabilities and assets.....	1120
— foreign, in Canada.....	168-9	— notes.....	1120, 1122-3
American Federation of Labor.....	776, 782, 783	— reserves.....	1131
Animal products, consumption of.....	501-3	— deposits.....	1120, 1124, 1130-1
Animals, farm, numbers and values of.....	481	— Industrial Development.....	148, 1120-1
— marketing of.....	499, 914-6	— Post Office Savings.....	1133-4
Annual holidays, regulation of.....	738, 740, 765-6	Bankruptcies and commercial failures.....	937-40
— Vacations Act.....	153	Bankruptcy Act.....	104, 937-8
Annuities, Government.....	1161-3	Banks, chartered.....	1125-33
Anti-discrimination laws.....	739, 740-1	— assets and liabilities.....	1130
Apiculture.....	494-5	— branches of.....	1128-9
Appalachian Region.....	23-4	— cheque payments.....	1133
Appeal Board, Tax.....	104, 140	— deposits.....	1124, 1130-1
Appeals in criminal cases.....	424	— financial statistics of.....	1130-2
Apples, production and value of.....	490	— note circulation of.....	1122
Appointments, diplomatic, 1966-67.....	1241	Barbados, tariff arrangements with.....	1002
— official, register of 1966-67.....	1240-6, 1261	— trade with—see "Trade by country".	
Apprenticeship training.....	347, 348, 741	Barley, acreage, production and value of.....	475, 476, 478
Archives, Public.....	138, 154, 1041	— farm income from.....	471
Arctic, Climate of Canadian.....	55-74	— international statistics of.....	507
Area of Canada and provinces.....	7, 34, 441	— prices of.....	475, 499, 911
— Development Program.....	278	— receipts and shipments of.....	913
— land, agricultural and forested.....	440-2	— stocks of.....	479
— by tenure.....	34	— supply and disposition of.....	912
Areas and elevations of principal lakes.....	12-4	Beans, production and value of.....	477
— and depths of Great Lakes.....	12	Beaver pelts, number and value of.....	626
— and populations of countries of the world.....	209-14	Beef, consumption of.....	501, 502
— of principal islands.....	16-7	— retail prices of.....	945
Argentina, tariff arrangements with.....	1004	Beekeeping industry.....	494-5
— trade with—see "Trade by country".		Beet sugar, shipments of.....	495
Armed Forces—see "Canadian Forces".		Beets, sugar, production and value of.....	478, 495
Army, Canadian, cadets.....	1176	Belgium and Luxembourg, tariff arrangements with.....	1004
— equivalent ranks.....	1171	— trade with—see "Trade by country".	
— operations and training.....	1174-6, 1178-80	Bermuda, tariff arrangements with.....	1002
— rates of pay and allowances.....	1168-71	— trade with—see "Trade by country".	
Arsenals Limited, Canadian.....	143, 145	Beverages, alcoholic, control and sale of.....	930-2
Art and education.....	365-73	— consumption of.....	501
— schools, galleries and organizations.....	365-8	Bill of Rights Act, Canadian.....	80, 152, 414
Asbestos production.....	539, 540, 552, 567	Birds, protection of migratory.....	50, 51
Assets abroad, Canadian.....	1100-1	Birthplaces of adult offenders.....	417
— chartered bank.....	1130	— of immigrants.....	220-1
— Federal Government.....	1042	— of population.....	197-8
Assistance Fund, Veterans.....	333	Births and birth rates.....	236-51, 276
— old age.....	315-6	— in hospitals.....	243
— Plan, Canada.....	314-5	— in urban centres.....	238-40, 244
— unemployment.....	317-8	— illegitimate.....	244, 248
Astronomy, research in.....	400-1	— multiple.....	244-5
Atlantic Development Board.....	144, 445, 1111-4	— sex of.....	242-3
Atomic Energy Agency, International.....	142, 144, 1040	— stillbirths.....	245, 249-51
— Control Board.....	142, 144, 1040	Blind persons, allowances for.....	316
— of Canada Limited.....	143, 144, 391-6	— education for.....	352, 353
— research.....	391-6, 410	Board, Agricultural Stabilization.....	142, 144, 457-8
Auditor General's Office.....	129, 130	— Air Transport.....	130, 787, 854
— Act administered by.....	151	— Atlantic Development.....	144, 445, 1111-4
— expenditure re.....	1040	— Atomic Energy Control.....	142, 144, 1040
Australia, tariff arrangements with.....	1002	— of Broadcast Governors.....	130, 870, 881-2, 1040
— trade with—see "Trade by country".		— Canada Labour Relations.....	736
Austria, tariff arrangements with.....	1004	— Canadian Wheat.....	146, 469, 470, 924-5
— trade with—see "Trade by country".		— Defence Research.....	136, 410, 1180-1
Automobile accidents.....	256, 261, 815-6	— Dominion Coal.....	142, 147-8, 583-5
— insurance.....	1158	— Eastern Rockies Forest Conservation.....	148
— Saskatchewan government.....	1163-4	— Fisheries Prices Support.....	142, 148, 613
Automobiles, laws and regulations re.....	800-4	— Research.....	133, 611-3
— new, apparent supply of.....	809	— of Grain Commissioners.....	142, 130, 923-4
— sales of.....	904	— Municipal Development and Loan.....	142, 149, 1114-5
— registration of.....	803	— National Energy.....	136, 788, 932-4
— revenue from.....	809-10	— Film.....	136, 354, 374-5, 1041
Automotive program (Canada-United States).....	702	— Harbours.....	143, 149, 823-4, 835, 837
Aviation, civil, administration of.....	843-4	— Parole.....	137, 431-2
— control of.....	787, 854	— Permanent Joint, on Defence.....	1168
— finances.....	846, 853, 854		



	PAGE
Board, Tariff .....	140
— Tax Appeal .....	104, <b>140</b>
— of Transport Commissioners.....	104, 130, <b>786-7</b> , 837
— Treasury .....	141
— War Veterans Allowance .....	141, 330-1
Bolivia, tariff arrangements with .....	1005
— trade with—see "Trade by country".	
Bond market .....	1143-5
Books about Canada .....	1185-1201
Boreal forest region .....	509
Boundaries of Canada .....	7
Bounties and subventions, coal .....	584-5, <b>936-7</b>
Brazil, tariff arrangements with .....	1005
— trade with—see "Trade by country".	
Bridges, construction expenditures .....	715, 717
Britain, tariff arrangements with .....	1002
— trade with .....	628, 970-2, 976, 979, <b>981-7</b> , <b>988-91</b>
British Columbia, admission to Confederation .....	82
— agricultural colleges .....	468
— land .....	441
— produce, index numbers of .....	474, 498
— services .....	468
— Agriculture, Dept. of .....	468
— allowances for blind persons .....	316
— for disabled persons .....	317
— family .....	313
— mothers' .....	322
— youth .....	314
— area .....	7, 34, 441
— births and birth rates .....	237, 243, 244, 250
— capital and repair expenditures .....	712
— construction industry .....	716, 717, 719
— co-operative associations .....	919
— deaths and death rates .....	237, 254, 260
— diseases, notifiable .....	306
— divorces .....	271
— earnings, average in industry .....	751, 754
— education—see "Education".	
— electric power statistics .....	643, 648, <b>651-5</b> , 663
— employment, index numbers of .....	750, 751
— and payrolls .....	163
— farm income .....	472, 473
— loans approved .....	459, 461
— statistics, Census .....	503-5
— field crops .....	476-8
— fisheries administration .....	621
— fishery products—see "Fisheries".	
— forest resources—see "Forest".	
— forested area .....	441, 511, 512
— forestry program .....	515, <b>533-4</b>
— freight movement .....	921, 922
— government .....	105-6, <b>116-7</b>
— debt .....	1062, 1063
— revenue and expenditure .....	1036-7, 1057-61
— health services .....	281-4, 290-7, 307, 308
— hospitals .....	281-4, 298-9, 301-2, 304
— Hydro and Power Authority .....	648, <b>663-4</b>
— immigrants—see "Population".	
— irrigation and land conservation .....	446
— judicial convictions—see "Criminal and judicial".	
— labour legislation .....	737-41
— lakes, principal .....	13-4
— libraries .....	378, 379, 380
— Lieutenant-Governor .....	116
— livestock .....	481, 916
— manufactures .....	689, 694-5
— marriages .....	237, 268
— mineral production—see "Mineral" and "Minerals".	
— mining, provincial aid to .....	589
— laws of—see "Mining".	
— motor vehicle and traffic regulations .....	800-4
— mountains and other heights .....	18
— municipalities .....	119-20, 122-3
— old age assistance .....	316
— security .....	312
— parks .....	34, 38, 39, <b>46</b>
— population—see "Population".	
— representation in the House of Commons .....	93, 99-100
— in the Senate .....	91, 92, 1261

	PAGE
British Columbia Research Council .....	404
— roads and highways .....	804, 805, 806
— Royal Commissions .....	125
— schools—see "Education".	
— unemployment assistance .....	318
— insurance benefits .....	771
— water power of—see "Water Power".	
— welfare services .....	320-4
— workmen's compensation .....	741, <b>772-3</b>
British Honduras, tariff arrangements with .....	1002
— trade with—see "Trade by country".	
— North America Act .....	78-84, 88, 90, 92-3, 103, 105, 119, 412-3, 449, 607
— preferential tariff .....	1000-4
Broadcast Governors, Board of .....	130, 870, <b>881-2</b> , 1040
Broadcasting Act, Canadian .....	870, 882
— Agreement, North American Regional .....	869, 876
— Corporation, Canadian .....	143, <b>145</b> , <b>373-4</b> , 870, <b>881-8</b> , 1040
— radio and television .....	373-4, <b>881-8</b>
Buckwheat, acreage, production and value of .....	477
Budget, Federal Government .....	127
Building construction .....	<b>713-4</b> , 724-5
— government aid to house .....	335-6, 458-9, <b>720-3</b> , 724, 725-8
— permits issued .....	717-9
— research .....	388, 723
Bulgaria, tariff arrangements with .....	1005
— trade with—see "Trade by country".	
Bullion and coinage issued .....	1124
Bureau of Statistics, Dominion .....	132
— publications .....	1203
Burma, tariff arrangements with .....	1005
— trade with—see "Trade by country".	
Buses, passenger .....	812-3
Business colleges .....	352, 353, 354, 363
— failures .....	937-40
Butter, domestic disappearance of .....	<b>489</b> , 501
— production of .....	486
By-elections since 26th General Election .....	100, 1261
Cabinet, federal .....	85-7, 100-1, 1261
Cables landed in Canada .....	874
Calves, marketed .....	915, 916
— prices of .....	499
— slaughtered at inspected plants .....	482
Canada Assistance Plan .....	314-5
— and Colombo Plan .....	170, <b>178</b>
— and Commonwealth relations, 1965-66 .....	<b>170-1</b> , 178-80
— and International Labour Organization .....	172, 173
— and North Atlantic Treaty Organization .....	<b>176-7</b> , 1168, 1172, 1174, 1176, 1183
— and UNESCO .....	172, <b>174</b> , 354, <b>376-7</b>
— and the United Nations .....	<b>171-6</b> , 354, 376-7
— area of .....	7, 34, 441
— chronological history of .....	1254-60
— constitution and government of .....	78-181, 1261
— Council .....	145, <b>375-7</b> , 406
— Emergency Measures Organization .....	<b>131</b> , 1183-4
— Fair Employment Practices Act .....	736
— Labour Relations Board .....	736
— (Standards) Code .....	736-7, 1251
— Land Inventory .....	447
— Manpower Centres .....	734
— Pension Plan .....	153, <b>309-12</b>
— Shipping Act .....	154, 155, <b>816</b> , <b>817</b> , 833, 876
— Student Loans Act .....	152, 349
— Water Conservation Assistance Act .....	151, <b>446</b>
Canada's external relations .....	163-81
— international activities, 1965-66 .....	170-81
— investment position .....	1095-1101
— mineral industry, 1867-1967 .....	536-81
— Participation in the Changing Pattern of World Trade, 1953-66 .....	953-66
— status in Commonwealth .....	163-4
— Canadian Army .....	1168-71, 1174-6, 1178-80
— Arsenals Limited .....	<b>143</b> , <b>145</b>
— balance of international payments .....	1089-94
— Bill of Rights Act .....	80, 152, <b>414</b>



	PAGE		PAGE
Canadian Broadcasting Act.....	870, 882	Chemicals and chemical products, exports of...	982
— Corporation.....	143, 145, 373-4, 870, 881-8, 1040	— imports of.....	985
— educational functions of.....	373-4	— industries, activity of.....	669-70, 683, 689-95
— international service.....	885-6	Cheque payments.....	1133
— citizenship.....	139, 154, 228-33	Chief Electoral Officer.....	137, 1041
— Act.....	154, 228-30	— Justice of Canada.....	103
— statistics.....	230-3	Child welfare services, provincial.....	323-4
— Coast Guard.....	832-3	Children of War Dead (Education Assistance) Act.....	333
— Commercial Corporation.....	143, 145, 1183	Children's Fund, United Nations (UNICEF).....	171
— Conference on Aging.....	278	Chile, tariff arrangements with.....	1005
— Constitution, amendment of the.....	81	— trade with—see "Trade by country".	
— Corporation for the 1967 World Exhibition.....	145-6	China, tariff arrangements with.....	1005
— Criminal Code.....	152, 413-4	— trade with—see "Trade by country".	
— law and procedure.....	412-4	Chinchilla pelts, number and value of.....	623-4, 627
— exchange rates.....	1141-3	Chronology.....	1254-60
— external aid programs.....	178-81	Cigarettes, consumption of.....	492
— Farm Loan Act.....	461	— and cigars, excise tariff.....	1028-9, 1049-50
— Forces, command structure of.....	1172-3	Cities, average earnings in.....	751-2, 754
— Headquarters (CFHQ).....	1167	— births in.....	238-40
— liaison abroad.....	167	— building permits in.....	718
— operations and training of.....	1173-80	— cheques cashed at clearing-house centres.....	1133
— rates of pay and allowances.....	1168-71	— consumer price indexes for regional.....	946
— services and staff training colleges.....	1178-80	— deaths in.....	238-40
— Government Participation, 1967 Exhibition.....	146	— distances between.....	8
— Printing Bureau.....	131	— employment index numbers.....	750, 751-2
— Travel Bureau.....	999	— housing development in.....	722, 728
— Labour Congress.....	778, 782, 783	— infant mortality in.....	238-40
— life tables.....	271-5	— marriages in.....	238-40
— Maritime Commission.....	142, 146, 788	— populations of.....	187-93
— Mint, Royal.....	133, 1038, 1123-4	— wage rates in.....	740, 763-4
— National Railways—see "Railways".		Citizenship, Canadian.....	139, 154, 228-33
— Steamships Limited.....	143	— Act.....	154, 228-30
— Overseas Telecommunication Corporation.....	143, 146, 873-4	— certificates issued.....	230
— Pacific Air Lines Limited.....	846	— characteristics of persons granted.....	231-3
— Railway.....	788, 795, 800	— loss of.....	229-30
— Patents and Development Limited.....	143, 146	— statistics.....	230-3
— Penitentiary Service.....	131	Civil air transport.....	838-55
— Pension Commission.....	131, 329	— in Canada, an Outline of the Develop- ment of.....	838-43
— Press.....	891-5	— aviation statistics.....	852-5
— representation abroad, diplomatic.....	164-8	— defence.....	1038, 1183-4
— Services Colleges.....	1178-9	— emergency planning.....	1183-4
— Shield.....	21-3	— Service Commission—see "Public Service Commission".	
— shipping registry.....	817	Civilian labour force.....	741-6
— Wheat Board.....	146, 469, 470, 924-5	— War Pensions and Allowances Act.....	155, 331-2
— Wildlife Service.....	50-1	— Clay products, production of.....	540, 553, 573
Canals, Canadian systems.....	824-32	— Clearing-house transactions.....	1133
— expenditure and revenue re.....	831, 835, 837	— Climate of Canada.....	52-74
— traffic of.....	824-32	— of Canadian Arctic.....	55-74
— under Department of Transport.....	825, 837	Clothing industries, activity of.....	672, 681, 689-95
Cancer, deaths from.....	256	Coal Board, Dominion.....	142, 147-8, 538-5
— services for.....	293	— consumption, imports and exports.....	578-80, 982, 984
Capital expenditures, construction and housing.....	705-30	— and petroleum products industries.....	669, 683, 689, 691-5
— on construction and on machinery and equipment.....	705-12	— production.....	539, 540, 553, 578-81
— on waterways.....	835	— subventions and bounties on.....	554-5, 936-7
— investment in Canada.....	1091-9	— world production of.....	594-5
— Plan, National.....	48-9	Coast forest region.....	509, 510
— and repair expenditures.....	708-12	— Guard, Canadian.....	832-3
— Revision Acts, CNR.....	797	Coastal waters.....	14-6
Cargoes, water-borne.....	818-22, 826-8, 830-1, 922	Coasting service, shipping.....	817-22
Caribbean Program, Commonwealth.....	178-9	Coastline, length of.....	14
Casualty insurance.....	1155, 1158-9	Cobalt ore, production of.....	539, 551, 565
Cattle, marketing of.....	915, 916	Cod, quantity landed and value of.....	603
— numbers and values of.....	481	Coin and bullion issued.....	1124
— prices of.....	499	— in circulation.....	1123
— slaughtered at inspected plants.....	482	Cold storage and warehousing.....	916-8
Cement production.....	540, 553, 570-1	Collective agreements.....	738, 741
Census—see "Population".		Colleges—see "Education".	
— agricultural statistics of.....	503-5	— and schools, agricultural.....	468
Centennial Commission.....	143, 147	— Services and staff training (Armed Forces).....	1178-80
Central Mortgage and Housing Corporation.....	143, 147, 720-8	Colombia, tariff arrangements with.....	1005
Cereals, consumption of.....	500	— trade with—see "Trade by country".	
Ceylon, tariff arrangements with.....	1002	Colombo Plan, Canada and.....	170, 178
— trade with—see "Trade by country".		Columbia forest region.....	509, 510
Chartered banks—see "Banks, chartered".		— River power development.....	648
Charts and maps, list of.....	v	Columbium, production of.....	539, 551, 565
Cheese, domestic disappearance of.....	489, 501	Combinations in restraint of trade.....	928-30
— production of.....	486	Combines Investigation Act.....	928-30
		Commerce—see "Trade".	

	PAGE		PAGE
Commercial banking system.....	1125-35	Construction, pipeline.....	855-9
— construction.....	714	— under Farm Credit Act.....	460-1
— Corporation, Canadian.....	143, 145, 1183	— Farm Improvement Loans Act.....	458-9
— failures and bankruptcies.....	937-40	— National Housing Act.....	720-8
— fishing and marketing.....	599-601	— Veterans' Land Act.....	335-6
— services, capital expenditures for.....	711	— in urban centres, proposed.....	718
Commission, Canadian Maritime.....	142, 146, 788	— work performed, value of.....	712-6
— Pension.....	131, 329	Consulates, Canadian, abroad.....	167-8
— Centennial.....	143, 147	Consumer credit, retail.....	904-5
— Commonwealth War Graves.....	136, 236	— expenditure surveys.....	947-9
— International Joint.....	135, 443-4	— price index.....	944-6
— Law.....	143, 179	Consumption of cigarettes.....	492
— National Battlefields.....	143, 149	— of food.....	500-3
— Capital.....	46-9, 143, 149	Continental shelf.....	14-5
— Northern Canada Power.....	143, 150, 648, 664	Control of alcoholic beverages.....	930-1
— Public Service.....	138-9, 156	— of civil aviation.....	787, 854
— Restrictive Trade Practices.....	929	— of coal.....	583-5
— Unemployment Insurance.....	142, 150, 768	— of communications.....	869-70, 875-7, 881-2
Commissioners, Board of Grain.....	130, 923-4	— of farm products marketing.....	923-8
— Transport.....	104, 130, 786-7, 837	— of food and drugs.....	285-6
Commissions, power, provincial.....	644-8, 655-64	— of foreign exchange.....	1141-3
— Royal, federal and provincial.....	124-5	— of grain trade.....	923-5
Commodities, movement and marketing of.....	896-922	— of radio broadcasting.....	869-70, 875-7, 881-2
— principal, imported and exported.....	980-7	— of trade.....	923-37, 997
Commodity standards.....	934	— of transportation.....	785-8
Common stocks, index numbers of.....	950-1	— of wages.....	734-40
Commons, House of.....	85-7, 90, 92-101, 1261	Convictions of adults.....	414-21
— Members of.....	95-100, 1261	— appeals against.....	424
Commonwealth Caribbean Program.....	178-9	— multiple.....	418
— tariff arrangements with.....	1002	— summary.....	423-4
— Heads of Government meeting, 1966.....	170	— of young adult offenders.....	421-3
— of Nations, Canada's status in.....	163-4	Convicts, number of.....	429
— relations, 1965-66, Canada and.....	170-1, 178-80	Co-operatives, Eskimo.....	209
— Scholarship and Fellowship Plan.....	179-80	— fishermen's.....	919
— tariff arrangements with.....	1000-4	— marketing and purchasing.....	918-20
— Technical Assistance Program.....	178	— service.....	919
— trade with.....	970-1, 972-80	— wholesale.....	919
War Graves Commission.....	336	Copper production.....	539, 540, 551, 556-8
Communication, Government control over.....		— world production of.....	594-5
— agencies of.....	869-70, 875-7, 881-2	Copyrights, industrial designs, etc.....	935-6
Communications.....	861-95, 1038	Cordilleran Region.....	24-7
— by cable.....	873-4	Corn, production and value of.....	477, 478
— by satellite.....	861-2, 874	Corporation income taxes.....	
— meteorological.....	877-8	1016, 1035, 1040, 1046, 1048	
— radar.....	851, 878, 1176	— system of.....	1023-6, 1030
— radio and television.....	881-8	— profits.....	1048-9, 1079-80
— telephones and telegraphs.....	862-9, 870-4, 880	Corporations, Crown.....	142-50, 156, 162
Companies, life insurance.....	1145-54	— Agency.....	143, 156, 162
— small loans.....	1140-1	— Departmental.....	142, 156
— trust and loan.....	1135-40	— Proprietary.....	143-4, 156, 162
Company of Young Canadians.....	147	Correctional institutions, adult.....	428-32
Compensation, workmen's.....	739, 741, 772-3	Cost-of-living index—see "Consumer Price Index"	
Comptroller of the Treasury.....	128-9, 137-8	Costa Rica, tariff arrangements with.....	1005
Conditional grants and shared-cost programs.....	1050-6	— trade with—see "Trade by country"	
Confederation, provincial admissions to.....	78-9, 82	Courts, federal.....	103-4
Congress of Industrial Organizations (CIO).....		— persons charged and convicted by.....	421
— Canadian Labour.....	776, 782, 783	— provincial and territorial.....	105
Conservation of fisheries.....	609, 610-1	Cows, milk, numbers and values of.....	481
— of forests.....	525-34	— prices of.....	499
— of land and water.....	445-7	Credit, consumer.....	904-5
— of wildlife.....	49-51, 447, 629-33	— unions.....	1134-5
Constituencies, redistribution of parliamentary.....	92-4	Crime and delinquency.....	412-38
Constitution, amendment of the Canadian.....	81	Criminal and judicial statistics.....	414-29, 436-8
— and government of Canada.....	78-181, 1261	— adults convicted of indictable offences.....	414-21
Construction, building.....	713-4, 724-5	— appeals.....	424
— permits.....	717-9	— convictions for summary conviction offences.....	423-4
— capital and repair expenditures on.....	705-12	— correctional institutions and training schools.....	428-32
— Central Mortgage and Housing Corporation aid to.....	147, 720-8	— court proceedings.....	421
— contracts awarded.....	717	— death sentences.....	419, 423
— of dwelling units.....	336, 724-8	— disposition of cases.....	418, 419-20, 428
— of educational buildings.....	714, 717	— of sentences.....	419, 423
— employment in.....	716, 744, 747, 749, 751	— females convicted.....	416, 417, 419-20, 422-3
— engineering.....	714-5, 717	— juvenile delinquents.....	425-8
— government aid to housing.....	335-6, 458-9, 720-3, 724, 725-8	— law and procedure.....	412-4
— of highways and roads.....	714, 717, 805-7	— parole system.....	137, 431-2
— of hospitals.....	714, 717	— penitentiary service.....	429-30
— hydro-electric.....	644-8	— police forces.....	432-6
— industry, earnings in.....	716, 751-4	— young adult offenders.....	421-3
— Limited, Defence (1951).....	143, 147, 1182	— Code.....	152, 413-4



	PAGE
Crop Insurance Act.....	458
Crops, field, production and values of.....	474-8
— grain, marketing of.....	908-12, 923-5
— prices of.....	475, 499, 909, 911
— stocks of.....	479, 912, 917
— supply and disposition of.....	908-12
— international statistics of.....	505-7
Crown Assets Disposal Corporation.....	143, 147
— corporations.....	142-50, 156, 162
— forests.....	34, 512, 526-34
— functions of the.....	84-5
— lands.....	33-49, 512, 526-34, 590-2
Cuba, tariff arrangements with.....	1005
— trade with—see "Trade by country".....	354, 365-81
Cultural activities related to education.....	1122-4
Currency, Canadian.....	1016, 1035, 1040
Customs duties, revenue from.....	1000-1, 1029
— system of.....	1000-10
— tariffs, development of.....	1003
Cyprus, tariff arrangements with.....	1006
— trade with—see "Trade by country".....	
Czechoslovakia, tariff arrangements with.....	
— trade with—see "Trade by country".....	
Dairy production.....	483-7
— products, consumption of.....	484-5, 488-9, 501
— farm income from.....	471
Daylight saving time.....	77
Deaf and blind, education for.....	352, 353
Deaths and death rates.....	236-41, 251-65, 376
— by cause.....	255-8, 261, 263-4
— by age and sex.....	251-4
— infant.....	236-41, 259-63, 276
— maternal.....	236-7, 263-5, 276
— in urban centres.....	233-40, 254, 261
Debt, consolidated, of all governments.....	1019
— federal, direct and indirect.....	1019, 1039
— funded.....	1019, 1039
— gross bonded.....	1019, 1039, 1043-4
— guaranteed.....	1019, 1039, 1045
— interest on.....	1019, 1039, 1045
— summary of.....	1019, 1067
— municipal.....	1019, 1045
— national.....	1042, 1045
— net.....	1019, 1062-3
— provincial.....	129
— public, administration of.....	509, 510
Deciduous forest region.....	1038, 1183-4
Defence, civil.....	143, 147, 1182
— Construction (1951) Limited.....	1182-3
— contracts.....	1168
— Council.....	1182-3
— expenditure.....	167, 1168
— liaison abroad.....	1167-84
— of Canada.....	
— National, Dept. of—see under "National".....	
— Production, Dept. of, Acts administered by.....	151
— expenditure re.....	1041, 1182
— functions of.....	131-2, 1181-3
— procurement and construction contracts.....	1182
— production and development sharing program.....	1182-3
— Research Board.....	136, 410, 1189-1
— Services and staff training colleges.....	1178-80
Delinquency and crime.....	412-38
— juvenile.....	425-8
Denmark, tariff arrangements with.....	1006
— trade with—see "Trade by country".....	
Dental health services, public.....	291
Departmental corporations, Crown.....	142, 156
Departments, federal, functions of (see also individual Departments).....	130-41
Deportations.....	226
Deposits, bank.....	1120, 1124, 1130-1
Development of Telecommunications in Canada.....	862-9
Diplomatic appointments, 1966-67.....	1241
— representation abroad.....	164-8
— in Canada.....	168-9

	PAGE
Director of Soldier Settlement and Director of the Veterans' Land Act.....	142, 147
Directory of sources of official information.....	1204-35
Disabled persons' allowances.....	317
— services for.....	296-7, 319-20
Diseases, notifiable.....	305-6
Disputes, industrial.....	735-6, 783-4
— Investigation Act.....	153, 735-6
Districts, electoral.....	95-100
Divorces.....	271
Docks, dry, earnings of federal.....	837
Doctors, numbers and earnings of.....	307-8
Dollar, price of U.S. in Canada.....	1143
— value of Canadian.....	1141-3
Dollars, holdings of U.S. in Canada.....	1143
Domestic trade and prices.....	896-952
Dominican Republic, tariff arrangements with.....	1006
— trade with—see "Trade by country".....	
Dominion Bureau of Statistics.....	132
— publications of.....	1203
— Coal Board.....	142, 147-8, 533-5
— Council of Health.....	279
— Observatories.....	399-401, 582-3
Dominion-provincial relations—see "Federal-provincial".....	
Drainage basins.....	9-10
Drugs, control of.....	285-6
Duties, excise.....	931, 1028-9, 1040, 1050
— succession.....	1033, 1040, 1049
Dwelling units constructed.....	336, 724-8
— loans for.....	335, 720-8
— statistics of the 1961 Census.....	728-9
Earnings, average weekly and hourly in industry.....	750-8
— of employees in Federal Government.....	156-62
— in manufactures.....	679-85, 688-98, 751-9
Eastern Rockies Forest Conservation Board.....	148
Economic activity, 1965-66.....	1069-75
— aggregates, trends in.....	1068-1117
— Co-operation and Development, Organization for (OECD).....	181
— Council of Canada.....	142, 148, 1101-11
— minerals.....	19-30
Ecuador, tariff arrangements with.....	1006
— trade with—see "Trade by country".....	
Education.....	337-81
— administration and organization of.....	339-50, 355
— adult.....	345-6, 352, 353, 354, 364, 373
— agricultural colleges and schools.....	468
— art schools, galleries and organizations.....	365-8
— for blind and deaf.....	352, 353
— business colleges.....	352, 353, 354, 363
— Canada Council.....	145, 375-7, 406
— CBC activities re.....	373-4
— correspondence courses.....	354
— current situation.....	337-9
— elementary and secondary.....	341-3, 350-8
— enrolment.....	351-3, 355-6, 359
— Eskimo.....	208-9, 354
— external aid in.....	350
— federal roles.....	347-50, 354, 361-2, 367-78, 1038
— financing of.....	346, 348-9, 354, 357-8, 361-2, 376, 405-6, 1038, 1059
— formal.....	337-84
— grade distribution.....	356
— grants to.....	349, 357-8, 361-2, 376
— Indian.....	204-5, 352, 353, 354
— library services.....	354, 377-81
— and museums.....	369-73
— NFB activities re.....	354, 374-5
— non-Canadian students.....	359
— private schools.....	352, 353, 354
— scholarships and fellowships.....	354, 376, 384, 385
— school boards.....	355
— construction.....	714, 717
— schools, numbers and types of.....	352-3
— overseas, DND.....	352, 353, 356
— special.....	343



	PAGE		PAGE
Education, teachers and salaries.....	343-4, 352, 353, 356-7, 361	Employment in bus companies.....	813
— universities and colleges, administration of.....	344-5	— in civil aviation.....	853, 855
— enrolment in.....	351, 352, 353, 359	— in construction industries.....	716, 744, 747, 749, 751
— finances of.....	346, 349, 361-2, 405-6	— in electrical utilities.....	852
— graduates of.....	360	— in express companies.....	800
— number of.....	358	— in Federal Government.....	156-62
— research.....	354, 404-6, 534-5	— in fisheries.....	604
— staffs of.....	361	— in fur industry.....	629
— Student Loans Act, Canada.....	152, 349	— in hospitals.....	301
— University Capital Grants Fund.....	361	— in manufactures.....	679-85, 688-700, 744, 747, 748-9, 751
— Grants Program.....	349, 361, 362	— by industry group.....	681-3, 689-95
— vocational and technical.....	346-9, 352, 353, 354, 363	— by province.....	688, 95, 700
Educational assistance to children of war dead.....	333	— in mineral industries.....	747, 748, 751
— to French-speaking states in Africa.....	180	— in provincial government.....	162-3
— functions of the CBC.....	373-4	— in service industries.....	747, 749, 751
— of the National Film Board.....	354, 374-5	— in telegraphs and telephones.....	872, 873
— status of adult offenders.....	417	— in trade.....	747, 749, 751
— of juvenile delinquents.....	428	— injuries, fatal.....	772, 773
Eggs, consumption of.....	501	— Practices Act, Canada Fair.....	736
— farm income from.....	471	— winter works programs.....	733
— production, utilization and value of.....	493	— of women.....	743, 744
Egypt—see "United Arab Republic".		— on railways.....	796, 800
Eldorado Aviation Limited.....	143, 148	— on urban transit systems.....	815
— Mining and Refining Limited.....	143, 148, 562	Energy, Mines and Resources, Dept. of, Acts administered by.....	151
Elections, federal, dates of.....	89	— functions of.....	132, 410, 581-3
— right to vote at.....	101-2	Engineering construction.....	714-5, 717
— voters on lists and votes polled at.....	95-100, 102	— research, NRC.....	388-90
— provincial.....	106-17	Eskimos, co-operatives of.....	209
— right to vote at.....	106	— education of.....	208-9, 354
— Yukon and N.W.T.....	117-9	— health and welfare services for.....	208, 286
Electoral Boundaries Readjustment Act.....	93-4	— population.....	203
— districts.....	95-100	Estate Tax Act.....	104, 153, 1026-7
— Officer, Chief.....	137, 1041	Estates, bankrupt, administration of.....	937-8
Electric energy generated, by type, of station.....	651	— trust and agency funds.....	1140
— provincial distribution of.....	651-2, 654	Estimates and appropriations, Federal Government.....	125-7
— imports and exports of.....	652, 653, 983	— of population, intercensal.....	202
— power commissions and corporations, provincial and territorial.....	644-8, 655-64	— of the world by continents.....	209-14
— consumption, domestic and farm.....	654	Ethiopia, trade arrangements with.....	1006
— development.....	634-44	— trade with—see "Trade by country".	
— trends in.....	634-7	Ethnic groups of population.....	196-7
— generating capability and load requirements.....	648-50	Exchange, foreign.....	1141-3
— facilities, construction of.....	644-8, 715	Exchequer Court of Canada.....	103-4
— nuclear, generation of.....	643-4	Excise duties and taxes.....	931, 1027-9, 1035, 1040, 1049-50
— statistics.....	651-5	Executive Branch of Federal Government.....	84-9, 1261
— thermal, generation of.....	642-3, 651, 653	Exhibition, 1967 World.....	145-6, 702
— utilization of.....	637-8	Expenditure, consumer.....	947-9
Electrical products industries, activity of.....	670, 683, 690-5	— gross national.....	1069, 1076-7
— utilities, fuel used by.....	655	— personal.....	1078
— ownership and regulation of.....	655-64	Expenditures, capital.....	705-12
Electricity and gas inspection.....	934	— and repair in various enterprises.....	708-11
— domestic and farm consumption of.....	654	— combined government.....	1017, 1079
— meters in use.....	934	— federal.....	127-8, 324-8, 354, 361-2, 409-11, 1017, 1036-8, 1040-1
— revenue from sale of.....	652, 653, 654	— municipal.....	324-6, 1017, 1064, 1066
Electronic research, NRC.....	389-90	— provincial.....	324-6, 354, 358, 1017, 1057, 1059-61
— systems, telephone.....	865-9	— on waterways.....	835-7
Electronics services, Government.....	875-9	Experimental farms, federal.....	450
Elevations, areas, depths of Great Lakes.....	12	Expo 67—see "Exhibition, 1967 World".	
— of principal lakes.....	12-4	Export controls.....	997
— of mountains and other heights.....	17-9	— Credits Insurance Corporation.....	143, 148, 999-1000
Elevators, grain handled at eastern.....	913	— new gold production available for.....	970
— storage.....	917	— valuation.....	968
El Salvador, tariff arrangements with.....	1006	Exports by commodities.....	981-3
— trade with—see "Trade by country".		— by geographic region.....	972-5
Embassies, legations, etc.....	164-9	— by leading countries.....	971
Emergency Gold Mining Assistance Act.....	585	— by section and stage of fabrication.....	988-9, 992
— Measures Organization, Canada.....	131, 1183-4	— of coal.....	580
— conditional grants and shared-cost programs of.....	1054	— of electric energy.....	652, 653, 983
— planning, civil defence.....	1183-4	— of furs.....	628
Emigration statistics.....	227	— of newsprint.....	521, 982
Employment.....	741-52, 760	— of livestock.....	981
— estimates of.....	747-52	— of wheat.....	909-10, 912, 981
— index numbers of.....	744, 747-9, 751	— of wood products.....	514, 521, 982
— by industries.....	744, 747-9, 751	— of wool.....	494
— by metropolitan area.....	750	— to Commonwealth countries.....	970, 972-5
— by occupational group.....	745	— percentage distribution of.....	970
— by region.....	746	— principal Canadian.....	981-3
— in agriculture.....	742, 744	— summary of world.....	966

	PAGE		PAGE
Exports, total domestic.....	969	Fertility rates.....	245-7
Express companies.....	799-800	Field crops, cash receipts from.....	470, 471
Ex-service personnel, welfare services for.....	332-3	— production and values of.....	474-8
External Affairs Dept., Acts administered by.....	151	Film Board, National.....	136, 354, 374-5, 1041
— expenditure re.....	1041	— educational functions of.....	354, 374-5
— functions of.....	132-3, 163-81, 350	Films, motion picture, production of.....	906
— aid programs.....	178-81	Finance company operations.....	904
— relations, Canada's.....	163-81	— Dept. of, Acts administered by.....	151-2, 458-9
— trade—see under "Foreign trade".		— expenditure re.....	1041
		— functions of.....	133
Factory legislation.....	734-41	— federal.....	125-9, 1015-29, 1035-50
Failures, commercial and industrial.....	937-40	— municipal.....	1015-9, 1034, 1037, 1064-7
Fair Employment Practices Act.....	736	— provincial.....	1015-20, 1030-4, 1036-7, 1057-63
— Wages Policy.....	734-5	Finances, hospital.....	302-4
Families and households.....	200-2	— of railways—see "Railways".	
Family allowances.....	312-3	— of schools—see "Education".	
Farm Assistance Act, Prairie.....	151, 462	Financial administration of the Government of Canada.....	125-9
— Credit Act.....	151, 460-1	Finland, tariff arrangements with.....	1006
— Corporation.....	143, 148, 460-1	— trade with—see "Trade by country".	
— electrification.....	654, 662	Fire insurance—see "Insurance".	
— implement and equipment sales.....	903	— losses.....	1157-8
— Improvement Loans Act.....	151, 458-9, 1127	Fires, forest.....	514-6
— income.....	469-73	— protection from.....	523, 526-34
— labour, wages of.....	766-7	Fiscal years, federal and provincial.....	vii
— livestock, numbers and values of.....	479-81	Fish, consumption of.....	501
— Loan Act, Canadian.....	461	— imports and exports.....	600-1, 981, 984
— loans.....	335-6, 458-9, 460-1	— products industry.....	604-7
— Machinery Syndicates Credit Act.....	461	— quantities landed and values of.....	599-604
— operators, income of.....	472-3	Fisheries and furs.....	597-633
— population.....	187	— conservation.....	609, 610-1
— prices.....	498-9	— Dept. of, Acts administered by.....	152
— index numbers of.....	498, 942	— conditional grants and shared-cost programs of.....	1054
— products, control of marketing of.....	923-8	— expenditure re.....	410, 1041
Farmers' Creditors Arrangement Act.....	937	— functions of.....	133, 410, 607-13, 614, 615, 621
— supplementary payments to.....	470, 471	— Development Act.....	608
Farming, fur.....	471, 622-4, 626-7	— federal-provincial relations re.....	608, 1054
Farms, Census statistics of.....	503-5	— governments and the.....	607-21
Fatal accidents, motor vehicle.....	256, 261, 815-6	— inland.....	602, 604
— railway.....	794	— international agreements re.....	598, 610-1
Fats and oils, consumption of.....	501	— persons employed in.....	604
Federal Assistance in Livestock Improvement.....	453-7	— Prices Support Board.....	142, 148, 613
— Cabinet.....	85-7, 100-1, 1261	— primary production of.....	599-604
— Crown corporations.....	142-50, 156, 162	— provincial research.....	616-21
— Departments, Boards, Commissions, etc.....	130-41	— Research Board.....	133, 611-3
— Acts administered by.....	151-5	— sea.....	597-604
— elections.....	89, 95-100, 102	— statistics of.....	601-7
— finance.....	125-9, 1015-29, 1035-50	Fishermen's co-operatives.....	919
— forest experiment stations.....	34, 522	Fishing and marketing, 1965, commercial.....	599-601
— forests.....	34, 512, 522-5	Fitness and amateur sport program.....	318-9
— franchise.....	101-2	Flaxseed, acreage, production and value of.....	475, 477, 478
— Government—see "Government".		— farm income from.....	471
— judiciary, the.....	103-4	— prices of.....	475, 499
— labour legislation.....	153, 731-7	— receipts and shipments of.....	913
— lands.....	33-41, 46-9, 512, 515, 590-1	— stocks of.....	479
— legislation, 1966-67.....	1247-53	— supply and disposition of.....	912
— Legislature, the.....	90-102, 1261	Flora of Canada.....	33
— Parliament.....	84-102, 1261	Flour, wheat, production of.....	914
— sessions of.....	89	— exports of.....	981
— research.....	382-401, 405-6, 409-11	Flying schools and clubs.....	849
— Royal Commissions.....	124	Food and Agriculture Organization.....	172, 173
Federal-provincial agricultural agreements.....	445-7, 1053	— and beverage industries, activity of.....	672, 681, 689-95
— conditional grants and shared-cost programs.....	1050-6	— consumption of.....	500-3
— fisheries committees.....	608, 1054	— and drug control.....	285-6
— forestry agreements.....	525, 1054	— exports of.....	981
— hospital insurance.....	281-4, 1035, 1055	— family expenditure on.....	947-9
— housing activities.....	722, 728, 1056	— imports of.....	984
— resource development programs.....	445-7, 1055	— prices, index numbers of.....	945
— road assistance programs.....	805-7	Foreign capital invested in Canada.....	1005-9
— taxation agreements.....	1020, 1036-7, 1050-6	— countries, tariff arrangements with.....	1001, 1004-10
— welfare programs.....	314-20, 1055	— currencies, Canadian life insurance in.....	1153-4
Federation of Labor, American.....	776, 782, 783	— exchange.....	1141-3
Feed grain assistance.....	462	— representation in Canada.....	168-9
Female Employees Equal Pay Act.....	736	— shipping service.....	817-22
Females, births of.....	242-3	— trade.....	953-1014
— convictions of.....	416, 417, 419-20, 422-3	— by country.....	971-80
— deaths of.....	251-4, 257-60	— Government and.....	993-1010
— in labour force.....	743, 744	— services.....	993-1000
— in population.....	194, 195	— offices abroad.....	994-6
— life expectancy of.....	272-5	— statistics.....	967-92



	PAGE		PAGE
Forest administration, research and conservation.....	522-35	Gasoline, sales of.....	810
— and allied industries.....	516-22	— taxation of.....	1031
— depletion.....	514-6	Gatineau Park.....	49
— experiment stations, federal.....	34, 522	General Agreement on Tariffs and Trade (GATT).....	1001-10
— fire protection.....	523, 526-34	— Assembly, United Nations.....	171
— statistics.....	514-6	Geographical Knowledge of Canada, Growth of	1-6
— inventories.....	441, 447, 511, 523, 525	Geography, physical.....	7-19
— land tenure.....	34, 512	Geological Survey of Canada.....	32, 33, 552
— products, exports of.....	514, 521, 982	Geology and economic minerals.....	19-32
— farm income from.....	471	Geophysics, research in.....	30-2, 399-400
— regions.....	508-10	Germany, Federal Republic of, tariff arrangements with.....	1006
— research.....	410, 523-5, 526-35	— trade with—see "Trade by country".	
— reserves.....	34	Ghana, tariff arrangements with.....	1003
— resources.....	441, 508-13	— trade with—see "Trade by country".	
— tree species.....	508-10, 512-3	Gold bullion, monetary use of.....	1124
— utilization.....	514	— Mining Assistance Act, Emergency.....	585
Forestry.....	508-35	— official holdings of.....	1143
— agreements, federal-provincial.....	525, 1054	— production of.....	539, 540, 551, 560-2
— capital and repair expenditures.....	703	— new, available for export.....	970
— employment, wages and salaries.....	747, 748, 751	— treatment of, in trade statistics.....	969-70
— federal program.....	515, 522-5	— world production of.....	594-5
— industry, lumber.....	517-8	Government of Canada, constitution and controls—see "Control".	78-181, 1261
— pulp and paper.....	519-21	— Federal, administrative functions of.....	125-55
— veneer and plywood.....	518-9	— aids to and control of trade.....	923-37, 993-1010
— provincial programs.....	526-34	— to housing.....	335-6, 458-9, 720-3, 724, 725-8
— reforestation.....	525-34	— to manufacturing.....	701-4
— and Rural Development, Dept. of, Acts administered by.....	152, 445, 446-7	— to mineral industry.....	581-5
— expenditure re.....	410	— to navigation.....	833, 850-1, 878-9
— functions of.....	133-4, 410, 445, 446-7	— to railways.....	790
— woods operations.....	516-7	— annuities.....	1161-3
Forests, Crown.....	34, 512, 526-34	— Cabinet.....	85-7, 100-1, 1261
Fox pelts, number and value of.....	624, 626, 627	— debt of.....	1019, 1039, 1043-5
France, tariff arrangements with.....	1006	— Departments, Boards, etc. (see also under individual Departments, etc.).....	130-50
— trade with—see "Trade by country".		— economic planning agencies.....	1101-15
Franchise, federal.....	101-2	— education, interest in.....	347-50, 354, 361-2, 367-78, 1038
— provincial.....	106	— employees and earnings in agency and proprietary corporations, etc.....	156, 162
Franklin District, area of.....	7	— employment.....	156-62
— creation of.....	82	— Executive, the.....	84-9, 1261
Fraternal societies, insurance business of.....	1146, 1151-3	— expenditure 127-8, 324-8, 354, 361-2, 409-11, 1017, 1036-8, 1040-1	
Freight hauled by motor carriers.....	811	— franchise.....	101-2
— by railways.....	792-4, 799, 921	— health activities.....	277-90, 324-8, 334-5, 1038
— movements, interprovincial.....	920-2	Hospital Insurance and Diagnostic Services Act.....	281-4, 1035, 1055
— traffic, water.....	817-23, 824-32	— hospitals.....	286, 298-9, 300, 328, 334
Freshwater area of Canada.....	7	— information services.....	1201-2
— fish, production and value of.....	604	— insurance.....	1161-3
Fruit, consumption of.....	500	— judiciary, the.....	103-4
— farm income from.....	471	— Legislature, the.....	90-102, 1261
— imports and exports of.....	981, 984	— National Health Grant Program.....	280-1, 296-7
— production.....	489-91	— public finance.....	125-9, 1015-29, 1035-50
Fuel, imports and exports of.....	579-80, 982, 984	— radio communication services.....	875-9
— mining, regulations re.....	583-5, 590-1, 592	— in relation to agriculture.....	445-7, 449-62
Fuels, production of.....	538-40, 543, 553, 573-81	— to fisheries.....	607-13
— sales of motive.....	810-1	— to forestry.....	515, 522-5
— world production of.....	594-5	— to labour.....	731-7
Fuelwood, production of.....	517	— to mineral industry.....	581-5, 590-1
Funded debt of Canada.....	1019, 1039	— revenue 127-8, 890, 931, 1016, 1035, 1040, 1045-50	
Fur bearing animal pelts produced.....	624-7	— surveying and mapping.....	32-3
— conservation.....	49-51, 447, 629-33	— taxation, system of.....	1018, 1020-9
— dressing industry.....	629	— telegraph and telephone service.....	873-4, 877-8
— farming.....	471, 622-4, 626-7	— welfare programs.....	309-14, 332-3, 1038
— goods industry.....	629	— municipal, organization of (see also under "Municipal").....	119-23
— industry.....	622-4	— printing Bureau, Canadian.....	131
— marketing.....	624, 627-8	— savings banks.....	1133-4
— processing industry.....	628-9	— of the Territories.....	105, 117-9, 1261
— production statistics.....	624-7	Governments, combined revenue of.....	1016
— resource management.....	49-51, 629-33	— expenditure of.....	1017
— trapping.....	622, 626	— debt of.....	1019
Furniture and fixture industries, activity of 682, 689-95		— provincial, organization of (see also under "Provincial").....	105-17
Furs and fisheries.....	597-633	Governors General of Canada.....	84-5, 1261
— imports and exports of.....	627-8, 981, 984	Grain, acreages, yields and values.....	474-8
		— Commissioners, Board of.....	130, 923-4
Gallery of Canada, National.....	142, 149, 367-8, 1041		
Gaoi sentences.....	419, 423		
— population.....	429		
Gas meter registrations.....	934		
— natural, production of.....	540, 553, 575		
— and oil pipelines.....	855-60		



	PAGE		PAGE
Grain crops of the Prairie Provinces.....	478	Honduras, tariff arrangements with.....	1006
— disposition of.....	908-12	— trade with—see "Trade by country".	
— farm income from.....	471	Honey, production and value of.....	494-5
— feed, assistance program.....	462	Horses, number and value of.....	481
— handled at eastern elevators.....	913	Hospital Insurance and Diagnostic Services Act	
— imports and exports.....	910-1, 981	281-4, 1035, 1055	
— lake shipments, by ports.....	913	— statistics.....	297-304, 328
— prices of.....	475, 499, 909, 911	Hospitals, administration of.....	279-84, 286-7, 334
— stocks in storage.....	479, 912, 917	— births in.....	243
— storage, licensed.....	917	— construction of.....	714, 717
— supplementary payments to producers.....	471	— federal.....	286, 298-9, 300, 328, 343
— trade, 1964-65.....	908-14	— finances of.....	302-4
— control of.....	923-5	— general.....	297-8, 300-4
Grants, Canada Council.....	375-7	— mental.....	297, 299-304
— conditional, federal-provincial.....	1050-6	— patients in.....	300
— public health.....	280-1	— personnel employed in.....	301
— to provinces.....	1036-7	— private.....	298-300
— to publicly controlled schools.....	357-8	— public.....	298-304
— to universities.....	349, 361-2, 376, 405-6	— tuberculosis.....	297, 299-304
— war service.....	332	— veterans.....	334
Gravel and sand production.....	540, 553, 571-2	Hotels, numbers and receipts of.....	907
Great Britain—see "Britain".		Hours of labour, average worked.....	753-4, 757-8
— Lakes, areas, elevations and depths of.....	12	— regulation of.....	734-5, 738
— St. Lawrence forest region.....	509	House of Commons, constitution, powers of	
— traffic.....	828-32	etc.....	85-7, 90, 92-101, 1261
Greece, tariff arrangements with.....	1006	— Members of.....	95-100, 1261
— trade with—see "Trade by country".		— construction.....	335-6, 713, 717, 724-8
Greenhouse operations.....	1069, 1076-7	Household goods movers and storage operators.....	812
Gross national expenditure.....	706, 713, 1069, 1075	Households and families.....	720-30
— product.....	1-6	— Act, National.....	147, 720-8
Growth of Geographical Knowledge of Canada.....	1043-4	— loans approved under.....	724, 725-8
Guaranteed securities, federal.....	1006	— activities in 1965-66.....	724-8
Guatemala, tariff arrangements with.....	1006	— capital and repair expenditures.....	708
— trade with—see "Trade by country".		— federal-provincial arrangements re.....	722-3, 728
Gypsum production.....	539, 540, 552, 569-70	— government aid to.....	335-6, 458-9, 720-3, 724, 725-8
		— research and community planning.....	723
		— statistics of 1961 Census.....	728-9
		Hungary, tariff arrangements with.....	1007
		— trade with—see "Trade by country".	
		Hydro and thermal-electric power construc-	
		tion.....	644-8
		— consumption, domestic and farm.....	654
		— generating capability.....	648-50
		— statistics.....	651-5
		— power resources, provincial.....	638-41
Haddock, quantity landed and value of.....	603	Iceland, tariff arrangements with.....	1007
Haiti, tariff arrangements with.....	1006	— trade with—see "Trade by country".	
— trade with—see "Trade by country".		Illegitimate births.....	244, 248
Halibut, quantity landed and value of.....	600, 603	Immigrant arrivals.....	217-26
Harbours.....	816-24, 835, 837	Immigrants, deportations of.....	226
— Board, National.....	143, 149, 823-4, 835, 837	— destinations and occupations of.....	223-6
— expenditure on.....	835, 837	— health services for.....	287
— facilities of principal.....	823-4	Immigration and citizenship.....	136, 215-34
— revenue from.....	837	— policy and administration.....	215-7
— traffic in.....	817-22, 824	— statistics.....	217-26
Hay, production, yield and value of.....	475, 478	— White Paper on.....	216, 217
Heads of Government meeting, 1966		Imports by commodity.....	976-9
(Commonwealth).....	170	— by geographic region.....	972
Health activities, federal.....	277-90, 324-8, 334-5, 1038	— by leading countries.....	990-1, 992
— provincial and local.....	281-4, 290-7, 324-6, 1059, 1066	— dutiable and free.....	969, 979-80
— agencies, voluntary.....	328	— of coal.....	579, 580
— Dominion Council of.....	279	— of furs.....	628
— expenditures on personal.....	327-8	— valuation of.....	968
— Grant Program, National.....	230-1, 296-7	Income, farm.....	469-73
— international.....	289	— investment.....	1079
— mental, programs for.....	292-3	— labour.....	1077
— public.....	279-308, 324-9, 334-5	— national.....	1069, 1075
— research.....	149, 288-9, 335, 405, 410	— net, at factor cost.....	1075
— Resources Fund.....	334-5	— personal.....	1069, 1077-8
— services, veterans.....	297-303	— of schools, universities and colleges	357-8, 361-2, 376, 405-6
— statistics.....	297-303	— tax collections, corporation	1016, 1035, 1040, 1046, 1048, 1079
— and Welfare, Dept. of National—see under		individual.....	1016, 1035, 1046-7
"National".		— system of.....	1021-6, 1030
Heights, mountain and other.....	17-9	Indemnities and allowances to Members of	
Herring, quantity landed and value of.....	603, 604	House of Commons and Senate.....	100-1
High Commissioners, Canadian.....	164-6		
Highway mileage, classification of.....	804		
— Trans-Canada.....	139, 805-6		
Highways and roads.....	804-7		
— traffic on.....	811-4		
— value of construction of.....	714, 717, 805-7		
Historic parks and sites, national.....	36-7, 38-40, 41		
History of the Labour Movement in Canada.....	773-81		
Hogs, marketed.....	915, 916		
— numbers and values of.....	481		
— prices of.....	499		
— slaughtered at inspected plants.....	482, 502		
Holidays, regulations re.....	738, 765-6		

	PAGE		PAGE
Index numbers of agricultural prices.....	498, 942	Insurance, government.....	1161-4
— production.....	474	— annuities.....	1161-3
— of building materials prices.....	719, 942-3	— guarantee.....	1159
— of common stocks.....	950-1	— hail.....	1159
— of construction industries.....	719	— hospital.....	281-4, 1035, 1055
— of consumer prices.....	944-6	— inland transportation.....	1159
— of employment.....	747-52	— life.....	333, 336, 1145-54
— of industry selling prices.....	686	— in currencies other than Canadian.....	1153-4
— of manufacturing production.....	686	— federal registration.....	1145-54
— of mineral production.....	539	— financial statistics of.....	1149-53
— of mining stocks.....	950	— operational statistics of.....	1146-9
— of preferred stock.....	952	— fraternal benefit societies.....	1146-1151-3
— of retail prices.....	944-6	— provincially licensed.....	1146
— of security prices.....	950-2	— total in Canada.....	1146
— of wages.....	751-2, 763	— veterans.....	333, 336
— of wholesale prices.....	941-3	— livestock.....	1159
India, tariff arrangements with.....	1003	— loan.....	720-1
— trade with—see "Trade by country".		— medical, voluntary.....	328-9
Indian Act.....	152	— pension plans.....	153, 278, 309-12, 1164-6
— Affairs and Northern Development, Dept. of, Acts administered by.....	152	— personal property.....	1159
— functions of.....	36, 134, 202-9, 410, 447	— plate glass.....	1159
— health services.....	286	— provincial government.....	1163-4
— hospitals.....	286	— sickness.....	1159
— population.....	202-3	— sprinkler leakage.....	1159
— reserves and bands.....	34, 202	— theft.....	1159
— schools.....	204-5, 352, 353, 354	— unemployment.....	150, 767-71, 1034
— welfare services.....	207	— veterans.....	333, 336
Indonesia, tariff arrangements with.....	1007	— weather and windstorm.....	1159
— trade with—see "Trade by country".		Interest on public debt.....	1045
Industrial construction work.....	713, 717	— payments and receipts, international.....	1093-4
— designs, protection of.....	935-6	Inter-governmental Maritime Consultative Organization.....	172, 174
— Development Bank.....	148, 1120-1	Interior Plains and Lowlands Region.....	28-9
— disputes.....	735-6, 783-4	International activities, 1965-66.....	170-81
— expansion, 1946-65.....	1083-4	— re education.....	350
— failures.....	939-40	— agreements re broadcasting.....	875
— groups, manufactures classified by.....	681-3, 689-95	— air agreements.....	174, 843
— minerals.....	538-50, 552-3, 566-73	— Atomic Energy Agency.....	172, 176
— Relations and Disputes Investigation Act 153, 735-6		— Bank for Reconstruction and Development.....	172, 175
— research.....	382-3, 385, 401-4, 406-9	— birth rates.....	276
— safety Acts.....	739, 741	— Civil Aviation Organization.....	172, 174, 843
— standards legislation.....	738	— crop statistics.....	505-7
— Technology, Program for the Advancement of (PAIT).....	703	— death rates.....	276
— training.....	346-9, 352, 353, 354, 363	— Development Association.....	172, 175-6
Industries—see individual industries.		— Finance Corporation.....	172, 175
Industry, Dept. of, Acts administered by.....	152	— fisheries conservation agreements.....	610-1
— expenditure re.....	1041	— health.....	289
— functions of.....	134-5, 410, 701-4	— investment position.....	1095-1101
— production trends.....	1080-5	— Joint Commission.....	135, 443-4
Infant mortality.....	236-41, 259-63, 276	— Labour Organization.....	172, 173
Information, official sources of.....	1185-1235	— Law Commission.....	176
Inland waters.....	9-14	— marriage rates.....	276
Innuition Region.....	27-8	— Monetary Fund.....	172, 175
Insolvencies and bankruptcies.....	937-40	— natural increase rates.....	276
Inspection of gas and electricity meters.....	934	— payments, balance of.....	1089-94
— of meats.....	451, 482	— Telecommunication Convention.....	869, 876
— of steamships.....	833-4, 835, 837	— Union.....	172, 174
— of weights and measures.....	934	— trade unions.....	773-83
Institutions, capital and repair expenditures on.....	711	— welfare.....	324
— penal.....	428-30	Interprovincial freight movements.....	920-2
— statistics—see "Hospitals".		Investment, capital, in Canada.....	1091-9
Insurance.....	1145-66	— in manufactures.....	709
— accident.....	1151	Investors index numbers of common stocks.....	1159
— aircraft.....	1158	Iran, tariff arrangements with.....	1007
— automobile.....	1158	— trade with—see "Trade by country".	
— boiler.....	1158	Iraq, tariff arrangements with.....	1007
— casualty.....	1155, 1158-9	— trade with—see "Trade by country".	
— Corporation, Export Credits.....	143, 148, 999-1000	Ireland, tariff arrangements with.....	1007
— death rates.....	1149	— trade with—see "Trade by country".	
— Dept., Acts administered by.....	152	Iron ore production.....	539, 540, 551, 555-6
— expenditure re.....	1041	— world.....	594-5
— functions of.....	135	— production of pig.....	556
— employers' liability.....	1159	— and products, exports of.....	982
— fire and casualty.....	1155-61	— imports of.....	984
— finances, federal registration.....	1159-61	— and steel mills industry.....	684
— total in Canada.....	1155	Irrigation and land conservation.....	445-7
— federal registration.....	1156	Islands of Canada.....	14, 16-7
— provincial licensees.....	1155	Israel, tariff arrangements with.....	1007
— forgery.....	1158	— trade with—see "Trade by country".	
— fraternal.....	1146, 1151-3	Italy, tariff arrangements with.....	1007
		— trade with—see "Trade by country".	



	PAGE		PAGE
Jail sentences.....	419, 423	Lands, occupied, improved, etc.....	441
— population.....	429	— provincial public.....	33-4, 35, 41-6, 512, 591-2
Jamaica, tariff arrangements with.....	1003	— timber, administration of.....	522-3, 526-34
— trade with—see "Trade by country".		Languages and mother tongues of population...	199-200
Japan, tariff arrangements with.....	1007	Latin American Program.....	180
— trade with—see "Trade by country".		Law, criminal.....	412-4
Judges of the Supreme Court.....	103	Laws, anti-discrimination.....	739
Judicial statistics—see "Criminal and judicial".		— mining.....	590-2
— system.....	412-4	— safety responsibility.....	739, 741
Judiciary, federal.....	103-4	Lead production.....	539, 540, 551, 553-60
— provincial.....	105	— world production of.....	594-5
Justice Dept., Acts administered by.....	152	Leather industries, activity of.....	672, 681, 689-94
— expenditure <i>re</i> .....	1041	Lebanon, tariff arrangements with.....	1007
— functions of.....	135, 412-4	— trade with—see "Trade by country".	
Juvenile delinquents.....	425-8	Legations abroad, Canadian.....	164-8
		— in Canada, foreign.....	168-9
Keewatin District, area of.....	7	Legislation, federal, 1966-67.....	1247-53
Kenya, tariff arrangements with.....	1003	— agriculture.....	151, 445-7, 449-62
— trade with—see "Trade by country".		— labour.....	153, 734-7
Knitting mills, activity of.....	681, 689-94	— mining.....	151, 590-1
Korea, trade with—see "Trade by country".		— respecting combinations in restraint of	
Kuwait, tariff arrangements with.....	1007	trade.....	928-30
— trade with—see "Trade by country".		— migratory bird.....	50-1
		— provincial labour.....	737-41
Labor, American Federation of.....	776, 782, 783	— mining.....	591-2
Labour.....	731-84	— safety responsibility.....	739, 741
— Congress, Canadian.....	778, 782, 783	Legislation, federal.....	90-102, 1261
— of Industrial Organizations.....	776, 782, 783	Legislatures, provincial.....	105-17
— Dept., Acts administered by.....	153, 734-7	Leprosy Act.....	287
— conditional grants and shared-cost pro-		Letters patent granted.....	934-5
grams of.....	1054-5	Liabilities, capital, of railways.....	795
— expenditure <i>re</i> .....	1041	— chartered bank.....	1130
— functions of.....	135, 731-2, 1161-2	— Federal Government.....	1043
— disputes.....	735-6, 783-4	Liaison abroad, military.....	167, 1168
— earnings of, average.....	750-8	Liberia, tariff arrangements with.....	1007
— employed in industry.....	744, 747-9, 751	— trade with—see "Trade by country".	
— farm, wages of.....	766-7	Libraries.....	354, 377-81
— force.....	741-6	— academic.....	378-9
— in agriculture.....	742, 744	— public.....	378-9
— civilian, estimates of.....	742	Library, National.....	137, 153, 377, 1041
— main characteristics of civilian.....	743-6	— Science.....	377-8
— non-agriculture.....	742, 744	— of Parliament.....	135-6
— unemployment in.....	742, 744, 746	Licences, civil air personnel and airport.....	855
— government in relation to.....	731-41	— excise.....	1050
— groups, main.....	781-3	— motor vehicle.....	808, 809-10
— hours, average worked.....	753-4, 757-8	— operators' regulations <i>re</i> .....	800-4
— income, estimates of.....	761-2	— radio stations.....	876-7
— legislation, federal.....	153, 734-7	— timber.....	512, 526-34
— provincial.....	737-41	Lieutenant-Governors—see individual	
— Movement in Canada, History of the.....	773-81	provinces.	
— Organization, International.....	172, 173	Life insurance—see "Insurance".	
— relations.....	735-6, 739, 741	— expectancy tables.....	271-5
— (Standards) Code, Canada.....	736-7, 1251	Lime, production of.....	540, 553
— strikes and lockouts.....	783-4	Liquor, control and sale of.....	930-2
— unions, number and membership.....	781-3	Livestock, farm income from.....	471
— vocational training.....	346-9	— grading.....	456, 915
— wage rates for selected occupations.....	763-4	— health of.....	451
— wages and hours, regulation of.....	734-5, 737-8, 739-40	— Improvement, Federal Assistance in.....	453-7
— working conditions, summary of selected.....	764-6	— marketing.....	499, 914-6
Lakes, areas, elevations and depths of Great.....	12	— numbers and values of.....	479-81
— of principal.....	12-4	— prices.....	499
Lamb and mutton, consumption of.....	501, 502	— record of performance (ROP) programs.....	453-7
— and sheep marketings.....	915, 916	— slaughtered.....	482, 502
— prices.....	499	Living costs.....	944-6
Land Act, Veterans'.....	147, 155, 335-6	Loan and trust companies, assets and liabilities.....	1137-9
— and freshwater areas.....	7	— federal, operations of.....	1135-7
— Inventory, Canada.....	447	— functions of.....	1137
— resources.....	440-2, 447	— provincial, operations of.....	1137
— settlement and house construction.....	335-6	Loans Act, Canada Student.....	152, 349
— use and renewable resource development.....	439-47	— bank.....	1131-2
— and water conservation.....	445-7	— companies, small.....	1140-1
Lands, classification of (agricultural, forested,		— farm.....	335-6, 458-9, 460-1
etc.).....	441	— for housing.....	335, 720-8
— by tenure.....	34, 512	— licensed money-lenders.....	1140-1
— federal public.....	33-41, 46-9, 512, 515, 590-1	— National Housing Act.....	147, 720-8
— forested.....	441, 511-2	— to veterans.....	335-6
		Lobsters, quantity landed and value of.....	603
		Lockouts and strikes.....	783-4
		Locks, canal.....	825
		Lumber, exports and imports of.....	982, 984
		— industry.....	517-8
		— production and shipments.....	518



	PAGE		PAGE
Machinery and equipment capital expenditures		Manitoba Research Council.....	403
on.....	705-12	roads and highways.....	804, 805, 806
— exports of.....	983	— Royal Commission.....	125
— imports of.....	985-6	— schools—see "Education".	
— industries, activity of.....	682, 689-95	— unemployment assistance.....	318
Mackenzie District, area of.....	7	insurance benefits.....	771
creation of.....	82	— water power of—see "Water Power".	
Magnesium, production of.....	539, 551, 565	welfare services.....	320-4
Mail services.....	889-90	— workmen's compensation.....	772-3
air.....	846, 852, 889	Manpower and Immigration, Dept. of, Acts	
Malaysia, tariff arrangements with.....	1003	administered by.....	153
trade with—see "Trade by country".		— Canada Manpower Division.....	732-4
Males, births of.....	242-3	— functions of.....	136, 215-7, 320, 346-8, 732-4
— convictions of.....	416, 419-20, 422-3	Manufactured goods, exports of.....	675
— deaths of.....	251-4, 257-60	Manufactures, by industry group.....	681-3, 689-95
— life expectancy of.....	272-5	— by metropolitan area.....	696-8
— in labour force.....	743, 744	— by province.....	687-95
— in population.....	194, 195	— summary statistics of.....	679-85, 688-98
Manitoba, admission to Confederation.....	82	of forty leading industries.....	684-5
agricultural college.....	468	— working conditions of employees in.....	764-6
land.....	441	Manufacturing, activity and total activity	
— produce, index numbers of.....	474, 498	678, 680-5, 688-98	
— services.....	465-6	— and the Canadian economy, 1946-65.....	665-75
— Agriculture and Conservation, Dept. of.....	465-6	— capital and repair expenditures.....	709
— allowances for blind persons.....	316	— establishments, number of.....	679-85, 688-98, 700-1
— for disabled persons.....	317	— size of.....	699-701
— family.....	313	— federal assistance to.....	701-4
— mothers.....	322	— growth of.....	665-75, 679-83, 686
— youth.....	314	— industries, earnings in.....	679-85, 688-98, 751-9
area.....	7, 34, 441	— employment in.....	679-85, 688-700, 744,
births and birth rates.....	236-7, 243, 244, 250	747, 748-9, 751	
— capital and repair expenditures.....	712	— hours of labour in, average.....	753-8
— construction industry.....	716, 717, 719	— wages and salaries, average.....	750-8
— co-operative associations.....	919	— working conditions in.....	764-6
— deaths and death rates.....	236-7, 254, 259	— price indexes.....	686
— diseases, notifiable.....	306	— production, volume of.....	686
— divorces.....	271	— trends in principal statistics, 1957-64.....	676-8
— earnings, average, in industry.....	751, 754	Maple sugar and syrup, consumption of.....	500
— Economic Consultative Board.....	1117	— production and value of.....	495-6
— education—see "Education".		Mapping and surveying, Federal Government.....	32-3
— electric power statistics.....	643, 647, 651-5, 661	Maps and charts, list of.....	v
— employment, index numbers of.....	750, 751	Marine construction.....	714, 717
— and payrolls.....	163	— navigation, radio aids to.....	878
— farm income.....	472, 473	— services of the Federal Government.....	832-4
— loans approved.....	459, 461	Mariners, health services for.....	286-7
— statistics, Census.....	503-5	Marital status of adult criminal offenders.....	417
— field crops.....	476-8	— of brides and bridegrooms.....	269-70
— fisheries administration.....	618-9	— of immigrants.....	223
— fishery products—see "Fisheries".		of population.....	196
— forest resources—see "Forest".		Maritime Commission, Canadian.....	142, 146, 788
— forested area.....	441, 511, 512	Marketing Act, Agricultural Products	
— forestry program.....	515, 531	Co-operative.....	926
— freight movement.....	921, 922	— boards, producer.....	927-8
— government.....	105-6, 113-4	— co-operatives.....	918-20
— debt.....	1062, 1063	— of commodities.....	896-922
— revenue and expenditure.....	1036-7, 1057-61	— of farm products other than grain.....	925-8
— health services.....	281-4, 290-7, 307, 308	— of furs.....	624, 627-8
— hospitals.....	281-4, 298-9, 301-2, 304	— of grain.....	908-12, 923-5
— immigrants—see "Population".		— of livestock.....	499, 914-6
— irrigation and land conservation.....	445, 446	Marriage, age at.....	269-70
— judicial convictions—see "Criminal and judicial".		— by religious denominations.....	270
— labour legislation.....	737-41	— dissolutions of.....	271
— lakes, principal.....	113	— numbers and rates.....	236-41, 267-70, 276
— libraries.....	378, 379, 380	Maternal mortality.....	236-7, 263-5, 276
— Lieutenant-Governor.....	13	Measures, weights, etc., administration of.....	934
— livestock.....	481, 916	— tables of.....	vii
— manufactures.....	688, 693	Meat packing and slaughtering industry.....	482, 501-3
— marriages.....	236-7, 268	— retail prices.....	945
— mineral production—see "Mineral" and		— supply, distribution and consumption of.....	483, 501-3
"Minerals".		Medical insurance, voluntary.....	328-9
— mining, provincial aid to.....	588	— research.....	149, 288-9, 335, 405, 410
— laws of—see "Mining".		— services, federal.....	286-7
— motor vehicle and traffic regulations.....	800-3	provincial.....	293-6
— mountains and other heights.....	18	for veterans.....	334-5
— municipalities.....	119-20, 122, 123	Medicare.....	279-80
— old age assistance.....	316	Members of the Cabinet.....	87, 1261
— security.....	312	— of the House of Commons, votes polled, and	
— parks.....	34, 37, 39, 44-5	voters on list.....	95-100
— population—see "Population".		— indemnities and allowances of.....	100-1
— representation in the House of Commons	83, 98-9, 1261	— of the Queen's Privy Council.....	88-9, 1261
in the Senate.....	91, 92	— of the Senate.....	91-2, 1261
		— indemnities and allowances of.....	100-1

	PAGE		PAGE
Mental health programs.....	292-3	Mountains and other heights.....	17-9
— hospitals.....	297, 299-304	Movement of freight, interprovincial.....	920-2
Merchandising and service establishments.....	896-907	Multiple births.....	244-5
— 1961 Census of.....	897-901	— convictions.....	418
— inter-census surveys, retail.....	902-5	Municipal debt.....	1019, 1067
— wholesale.....	902	— Development and Loan Board.....	142, 149, 1114-5
— service establishments.....	905-7	— expenditure.....	324-6, 1017, 1054, 1066
Metal industries, activity of.....	682, 689-95	— government, organization of.....	119-23
Metals and metallics—see "Minerals".		— health activities.....	290-7
Meteorological communications, federal.....	877-8	— police forces.....	434, 435, 436
— observing stations.....	75-6, 849, 877-8	— public finance.....	1015-9, 1034, 1037, 1064-7
Meters, electricity and gas.....	934	— revenue.....	1016, 1037, 1051, 1064-5
Metropolitan areas, census population of.....	186, 188	— tax levies.....	1034
— employment index numbers.....	750	Municipalities, number of.....	123
— federal employment in.....	158-9	— proposed construction in selected.....	718
— manufactures by.....	697-8	Museum, National, of Canada.....	369-72
Mexico, tariff arrangements with.....	1008	Museums.....	369-73
— trade with—see "Trade by country".		Muskrat pelts, number and value of.....	628
Microwave facilities, commercial.....	879-80	Mutton and lamb, consumption of.....	501, 502
Migratory bird legislation.....	50-1	Mutual aid programs.....	177
Military airfields.....	850		
— forces—see "Canadian Forces".		National accounts.....	1068-1080
Milk, consumption of.....	484-5, 488-9, 501	— Arts Centre Corporation.....	149
— marketing control of.....	926-7	— Battlefields Commission.....	143, 149
— production of concentrated products.....	487	— Capital Commission.....	46-9, 143, 149
— farm values of.....	485	— Plan.....	48-9
— and utilization.....	484	— debt.....	1045
Mineral industry, 1867-1967, Canada's.....	536-81	— defence.....	1167-84
— government aid to.....	581-9	— Act.....	104, 153
— industrial statistics of.....	592-3	— Armed Services—see under individual Service.	
— lands legislation, federal.....	590-1	— Dept. of, Acts administered by.....	153
— provincial.....	591-2	— functions of.....	136, 410, 1167-81, 1182
— production, provincial distribution of.....	542-81	— expenditure re.....	410, 1040, 1182
— products industries, non-metallic.....	670, 683, 689-95	— organization of.....	1167-8
Minerals, economic.....	19-30	— procurement and construction contracts.....	1182
— fuel production.....	538-40, 543, 553, 573-81	— schools, overseas.....	352, 353, 356
— imports and exports of.....	982, 984, 985	— services colleges and staff training colleges.....	1178-80
— industrial.....	538-50, 552-3, 566-73	— Employment Service—see "Canada Manpower Centres".	
— metallic, production of.....	538-52, 554-66	— Energy Board.....	136, 788, 932-4
— world production of.....	594-5	— expenditure, gross.....	1069, 1076-7
— non-metallic, production of.....	538-50, 552-3, 566-70	— Film Board.....	136, 354, 374-5, 1041
— structural materials.....	538, 540, 543, 553, 570-3	— educational functions of.....	354, 374-5
Mines and minerals.....	536-95	— Gallery of Canada.....	142, 149, 367-8, 1041
Minimum wage regulations.....	737-8, 739-40	— Harbours Board.....	143, 149, 823-4, 835, 837
Mining, current production.....	538-53	— Health Grant Program.....	280-1, 299-7
— industry, employment in.....	747, 748, 751	— and Welfare, Dept. of, Acts administered by.....	153
— government aid to.....	581-9	— consultative and technical services of.....	289-90
— wages and salaries, average.....	751-4	— expenditure re.....	410, 1041
— legislation.....	590-2	— functions of.....	136-7, 277-90, 309-19, 410
— stocks, index numbers of prices of.....	950	— research activities.....	288-9
Ministers, Cabinet.....	85-7, 100-1, 1261	— Housing Act.....	147, 720-8
— diplomatic.....	164-9	— income.....	1069, 1075
Ministries and Lieutenant-Governors of provinces.....	106-17	— labour organizations.....	773-83
Ministry, federal, members of 19th.....	87, 1261	— Library.....	137, 153, 377, 1041
Mink pelts, number and value of.....	622-3, 626, 627	— Museum of Canada.....	369-72
Mint, Royal Canadian.....	133, 1038, 1123-4	— Parole Board.....	137, 431-2
Molybdenum, production of.....	539, 551, 565-6	— parks and sites.....	34, 35-41
Money-lenders, licensed.....	1140-1	— product, gross.....	706, 713, 1069, 1075
Money-order system, operations of.....	890	— railways—see "Railways".	
Money supply.....	1123-4	— Research Council.....	142, 149-50, 332-91, 397-8, 410, 1041, 1055
Montane forest region.....	509-10	— conditional grants and shared-cost programs of.....	1055
Mortality, by causes.....	255-8, 261, 263-4	— scholarships and grants-in-aid.....	384, 385
— general.....	236-41, 251-65, 276	— Revenue Dept., Acts administered by.....	153-4
— infant.....	236-41, 259-63, 276	— expenditure re.....	1041
— maternal.....	236-7, 263-5, 276	— functions of.....	137, 1045-6, 1049-50
Mortgage lending.....	720-8	— Science Library.....	377-8
Mother tongues and languages of population.....	199-200	— Steamships Ltd., Canadian.....	143
Mothers' allowances.....	321-2	— voluntary health and welfare activities.....	328-9
Motion picture theatres and production.....	905-6	— welfare grant program.....	319
Motive fuels, sales of.....	810-1	Native peoples of Canada.....	202-9
— taxation of.....	1031	NATO, Canada and.....	176-7, 1168, 1172, 1174, 1176, 1183
Motor carriers, summary statistics of.....	811	Natural gas, processing and marketing of.....	577
— transport traffic.....	813-4	— pipelines.....	857-9, 860
— vehicle accidents.....	256, 261, 815-6	— production.....	540, 553, 575
— industry.....	684	— increase of population.....	184, 185, 236-41, 265-7, 276
— registrations by province.....	808		
— revenue from.....	809-10, 1016		
— regulations.....	800-4		
— sales and financing.....	904		
— statistics.....	808-16		
Motorcycles, registration of.....	808, 809		



	PAGE		PAGE
Navigation, aeronautical, radio aids to.....	850-1, 878-9	Newfoundland, admission to Confederation...	82
— facilities, financial statistics of.....	831, 834-8	— Agricultural Division.....	463
— Government aids to.....	833, 850-1, 878-9	— land.....	441
— marine, radio aids to.....	878	— allowances for blind persons.....	316
— shipping facilities and traffic.....	816-34	— for disabled persons.....	317
Navy, Royal Canadian, operations and training		— family.....	313
1173-4, 1178-80		— mothers.....	322
— rates of pay and allowances.....	1168-71	— youth.....	314
Netherlands, tariff arrangements with the....	1008	— area.....	7, 34, 441
— trade with—see "Trade by country".		— births and birth rates.....	236, 243, 244, 250
New Brunswick, admission to Confederation..	82	— capital and repair expenditures.....	712
— agricultural land.....	441	— construction industry.....	716, 717, 719
— produce, index numbers of.....	474, 498	— co-operative associations.....	919
— schools.....	468	— deaths and death rates.....	236, 254, 259
— services.....	463	— diseases, notifiable.....	306
— Agriculture, Dept. of.....	463	— divorces.....	271
— allowances for blind persons.....	316	— earnings, average in industry.....	751, 754
— for disabled persons.....	317	— education—see "Education".	
— family.....	313	— electric power statistics.....	640, 644, 651-5, 656
— mothers.....	322	— employment, index numbers of.....	750, 751
— youth.....	314	— and payrolls.....	163
— area.....	7, 34, 441	— farm loans approved.....	459, 461
— births and birth rates.....	236, 243, 244, 250	— statistics, Census.....	503-5
— capital and repair expenditures.....	712	— fisheries administration.....	613-4
— construction industry.....	716, 717, 719	— fishery products—see "Fisheries".	
— co-operative associations.....	919	— forest resources—see "Forest".	
— deaths and death rates.....	236, 254, 259	— forested area.....	441, 511, 512
— diseases, notifiable.....	306	— forestry program.....	515, 527-8
— divorces.....	271	— freight movement.....	921, 922
— earnings, average in industry.....	751, 754	— government.....	105-7
— education—see "Education".		— debt.....	1062, 1063
— electric power statistics.....	642, 644-5, 651-5, 657	— revenue and expenditure.....	1036-7, 1057-61
— employment, index numbers of.....	750, 751	— health services.....	281-4, 290-7, 307, 308
— and payrolls.....	163	— hospitals.....	281-4, 298-9, 301-3
— farm income.....	472, 473	— judicial convictions—see "Criminal and	
— loans approved.....	459, 461	judicial".	
— statistics, Census.....	503-5	— labour legislation.....	737-41
— field crops.....	476-8	— lakes, principal.....	12
— fisheries administration.....	615-6	— libraries.....	378, 379, 380
— fishery products—see "Fisheries".		— Lieutenant-Governor.....	106
— forest resources—see "Forest".		— manufactures.....	688, 689
— forested area.....	441, 511, 512	— marriages.....	236, 268
— forestry program.....	515, 527-8	— mineral production—see "Mineral" and	
— freight movement.....	921, 922	"Minerals".	
— government.....	105-6, 109-10	— mining, provincial aid to.....	586
— debt.....	1062, 1063	— motor vehicle and traffic regulations.....	800-3
— revenue and expenditure.....	1036-7, 1057-61	— mountains and other heights.....	17
— health services.....	281-4, 290-7, 307, 308	— municipalities.....	119-20, 123
— hospitals.....	281-4, 298-9, 301-2, 303-4	— old age assistance.....	316
— immigrants to—see "Population".		— security.....	312
— judicial convictions—see "Criminal and		— parks.....	34, 37, 38, 42
judicial".		— population—see "Population".	
— labour legislation.....	737-41	— representation in the House of Commons....	93, 95
— lakes, principal.....	12	— in the Senate.....	91-2, 1261
— libraries.....	378, 379, 380	— Research and Productivity Council.....	402-3
— Lieutenant-Governor.....	109	— roads and highways.....	804, 805, 806
— livestock.....	481	— Royal Commissions.....	125
— manufactures.....	688, 691	— schools—see "Education".	
— marriages.....	236, 268	— timber, estimated stand of.....	512
— mineral production—see "Mineral" and		— unemployment assistance.....	318
"Minerals".		— insurance benefits.....	771
— mining, provincial aid to.....	586	— water power of—see "Water Power".	
— laws of—see "Mining".		— welfare services.....	320-4
— motor vehicle and traffic regulations.....	800-3	— workmen's compensation.....	772-3
— mountains and other heights.....	17	Newspapers, daily, weekly.....	891-3
— municipalities.....	119-20, 121, 123	— revenue from sales of.....	894-5
— old age assistance.....	316	Newsprint, exports of.....	621, 932
— old age security.....	312	— production.....	521
— parks.....	34, 37, 39, 42	— world.....	521
— population—see "Population".		New Zealand, tariff arrangements with.....	1003
— representation in the House of Commons....	93, 95	— trade with—see "Trade by country".	
— in the Senate.....	91-2, 1261	Nicaragua, tariff arrangements with.....	1008
— Research and Productivity Council.....	402-3	— trade with—see "Trade by country".	
— roads and highways.....	804, 805, 806	Nickel, exports of.....	982
— Royal Commissions.....	125	— monetary use of.....	1123, 1124
— schools—see "Education".		— production.....	539, 540, 551, 554
— timber, estimated stand of.....	512	Nigeria, Federation of, tariff arrangements	
— unemployment assistance.....	318	with.....	1003
— insurance benefits.....	771	— trade with—see "Trade by country".	
— water power of—see "Water Power".		Non-metallic mineral products industries,	
— welfare services.....	320-4	activity of.....	670, 683, 689-95
— workmen's compensation.....	772-3	— production.....	538-50, 552-3, 566-70



	PAGE
North American Air Defence Command (NORAD).....	177, 1172, 1176
— Regional Broadcasting Agreement.....	869, 876
— Atlantic Treaty Organization, Canada and 176-7, 1168, 1172, 1174, 1176, 1183	
Northern Canada Power Commission	143, 150, 648, 664
— Transportation Company Limited.....	143, 150
Northwest Territories, administration of.....	105, 118-9
— allowances for blind persons.....	316
— for disabled persons.....	317
— family.....	313
— youth.....	314
— area.....	7, 34, 118, 441
— births and birth rates.....	237, 243, 244, 250
— creation of.....	82
— deaths and death rates.....	237, 254, 260
— diseases, notifiable.....	306
— education in.....	343, 353, 356
— electric power statistics.....	643, 648, 651-5, 664
— forested area.....	441, 511, 512
— government revenue, expenditure and debt	1036-7, 1057-61, 1063
— health services.....	281-4, 286, 307
— hospitals.....	281-4, 298-9, 301-2, 304
— lakes, principal.....	14
— manufactures.....	689, 695
— marriages.....	237, 269
— mineral production—see "Mineral" and "Minerals"	
— motor vehicle and traffic regulations.....	800-4
— mountains and other heights.....	19
— municipalities.....	123
— old age assistance.....	316
— security.....	312
— parks.....	34, 38
— population—see "Population"	
— representation, House of Commons.....	93, 100
— roads and highways.....	804, 805, 806-7
— unemployment assistance.....	318
Norway, tariff arrangements with.....	1008
— trade with—see "Trade by country"	
Notes, Bank of Canada.....	1120, 1122-3
— chartered bank.....	1122
Notifiable diseases.....	305-6
Nova Scotia, admission to Confederation.....	82
— agricultural college.....	468
— land.....	441
— produce, index numbers of.....	474, 498
— services.....	463
— Agriculture and Marketing, Dept. of.....	463
— allowances for blind persons.....	316
— for disabled persons.....	317
— family.....	313
— mothers.....	322
— youth.....	314
— area.....	7, 34, 441
— births and birth rates.....	236, 243, 244, 250
— capital and repair expenditures.....	712
— construction industry.....	716, 717, 719
— co-operative associations.....	919
— deaths and death rates.....	236, 254, 259
— diseases, notifiable.....	306
— divorces.....	271
— earnings, average in industry.....	751, 754
— education—see "Education"	
— electric power statistics.....	642, 644, 651-5, 656
— employment, index numbers of.....	750, 751
— and payrolls.....	163
— farm income.....	472, 473
— loans approved.....	459, 461
— statistics, Census.....	503-5
— field crops.....	476-8
— fisheries administration.....	614-5
— fishery products—see "Fisheries"	
— forest resources—see "Forests"	
— forested area.....	441, 511, 512
— forestry program.....	515, 527
— freight movement.....	921, 922
— government.....	105-6, 108-9
— debt.....	1062, 1063
— revenue and expenditure.....	1036-7, 1057-61

	PAGE
Nova Scotia, health services.....	281-4, 290-7, 307, 308
— hospitals.....	281-4, 298-9, 301-3
— immigrants—see "Population"	
— judicial convictions—see "Criminal and judicial"	
— labour legislation.....	737-41
— lakes, principal.....	12
— libraries.....	378, 379, 380
— Lieutenant-Governor.....	108
— livestock.....	481
— manufactures.....	688, 690-1
— marriages.....	236, 268
— mineral production—see "Mineral" and "Minerals"	
— mining, provincial aid to.....	586
— laws of—see "Mining"	
— motor vehicle and traffic regulations.....	800-3
— mountains and other heights.....	17
— municipalities.....	119-20, 121, 123
— old age assistance.....	316
— security.....	312
— parks.....	34, 37, 38-9, 42
— population—see "Population"	
— Power Commission.....	656
— representation in the House of Commons.....	93, 95
— in the Senate.....	91
— Research Foundation.....	402
— roads and highways.....	804, 805, 806
— Royal Commission.....	124
— schools—see "Education"	
— unemployment assistance.....	318
— insurance benefits.....	771
— Voluntary Planning Organization.....	1115
— water power of—see "Water Power"	
— welfare services.....	320-4
— workmen's compensation.....	772-3
Nuclear power.....	391-6, 643-4, 646-7, 650
Nursery stock.....	496-7
Nuts, consumption of.....	500

Oats, acreage, production and value of.....	475, 476, 478
— farm income from.....	471
— international statistics of.....	507
— prices of.....	475, 499, 911
— receipts and shipments of.....	913
— stocks of.....	479
— supply and disposition of.....	912
Observatories, Dominion.....	399-401, 582-3
Occupations of immigrants.....	223-6
— of persons convicted of indictable offences.....	417
— wage and salary rates for selected.....	763-4
Offenders, criminal.....	414-23, 429
Office of the Custodian.....	162
— of the Representation Commissioner.....	138
Official appointments, register of.....	1240-6, 1261
— sources of information.....	1185-1235
Oil fields.....	575-6
— and gas legislation.....	590-1, 592
— pipelines.....	855-60
Oils and fats, consumption of.....	501
Old age assistance.....	315-6
— security.....	312
Ontario, admission to Confederation.....	82
— agricultural colleges and schools.....	468
— land.....	441
— produce, index numbers of.....	474, 498
— services.....	464-5
— Agriculture, Dept. of.....	464-5
— allowances for blind persons.....	316
— for disabled persons.....	317
— family.....	313
— mothers.....	322
— youth.....	314
— area.....	7, 34, 441
— births and birth rates.....	236, 243, 244, 250
— capital and repair expenditures.....	712
— construction industry.....	716, 717, 719
— co-operative associations.....	919
— deaths and death rates.....	236, 254, 259
— diseases, notifiable.....	306
— divorces.....	271
— earnings, average in industry.....	751, 754

	PAGE		PAGE
Ontario Economic Council.....	1116-7	Paraguay, tariff arrangements with.....	1008
— education—see "Education".		— trade with—see "Trade by country".	
— electric power statistics.....642-3, 646-7, <b>651-5</b> , 658-61		Parents, ages of.....	247-8
— employment, index numbers of.....	750, 751	Park Steamship Company Limited.....	143
— and payrolls.....	163	Parks, historic.....	36-7, <b>38-9</b> , 41
— farm income.....	472, 473	— national.....	34, <b>35-41</b>
— loans approved.....	459, 461	— provincial.....	34, <b>41-6</b>
— statistics, Census.....	503-5	Parliament, federal.....	84-102, 1261
— field crops.....	476-8	— duration and sessions of.....	89
— fisheries administration.....	617-8	Parliamentary library.....	135-6
— fishery products—see "Fisheries".		— representation, redistribution of.....	92-4
— forest resources—see "Forest".		— secretaries.....	87, 101, 1261
— forested area.....	441, 511, 512	Parole Act.....	431
— forestry program.....	515, <b>529-31</b>	— Board, National.....	137, <b>431-2</b>
— freight movement.....	921, 922	Patents, administration of.....	934-5
— fruit produced, value of commercial.....	491	— and Development Limited, Canadian.....	143, <b>146</b>
— government.....	105-6, <b>112-3</b>	Patients in hospitals.....	800
— debt.....	1062, 1063	Payments, balance of international.....	1089-94
— revenue and expenditure.....	1036-7, 1057-61	Peaches, production and value of.....	490
— health services.....	281-4, 290-7, 307, 308	Pears, production and value of.....	490
— hospitals.....	281-4, 298-9, 301-2, 304	Peas, production and value of.....	476
— Hydro-Electric Power Commission of.....646-7, <b>658-61</b>		Pelts, fur, produced.....	624-7
— immigrants—see "Population"		Penitentiaries.....	428-30
— judicial convictions—see "Criminal and judicial".		— movement of convicts in.....	429
— labour legislation.....	737-41	Penitentiary Service, Canadian.....	131
— lakes, principal.....	13	Pension Act.....	155, <b>329-30</b>
— libraries.....	378, 379, 380	— Commission, Canadian.....	131, <b>329</b>
— Lieutenant-Governor.....	112	— Plan, Canada.....	153, <b>309-12</b>
— livestock.....	481, 916	— plans.....	153, <b>309-12</b> , <b>1164-6</b>
— manufactures.....	688, 692	Pensions advocates.....	332
— marriages.....	236, 268	— war veterans.....	329-30
— mineral production—see "Mineral" and "Minerals".		Personal expenditure.....	1078
— mining, provincial aid to.....	587-8	— income, source and disposition of.....	1069, <b>1077-8</b>
— laws of—see "Mining".		Peru, tariff arrangements with.....	1008
— motor vehicle and traffic regulations.....	800-3	— trade with—see "Trade by country".	
— mountains and other heights.....	18	Petroleum and coal products industries,	
— municipalities.....	119-20, 121-2, 123	activity of.....	669, 683, 689, 691-5
— old age assistance.....	316	— crude, world production of.....	594-5
— security.....	312	— discoveries and development.....	575-6
— parks.....	34, 37, 39, <b>43-4</b>	— production.....	539, 540, 553, <b>573-4</b>
— pipelines.....	856, 857, 858	— refining industry.....	684
— police force.....	433-4, 435, 436	— and marketing.....	576-7
— population—see "Population".		Philippines, tariff arrangements with.....	1008
— representation in the House of Commons		— trade with—see "Trade by country".	
— in the Senate.....	93, 97-8, 1261	Physical geography.....	7-19
— Research Foundation.....	404	Physicians, numbers and earnings of.....	307-8
— roads and highways.....	804, 805, 806	Physiographic regions.....	21-9
— Royal Commission.....	125	Physiography and related sciences.....	1-74
— Savings Office.....	1134	Pigs, marketing of.....	915, 916
— schools—see "Education".		— numbers and values of.....	481
— unemployment assistance.....	318	Pilot licences in force.....	855
— insurance benefits.....	771	Pilotage service.....	<b>834</b> , 835, 837
— water power—see "Water Power".		Pipeline developments, oil and gas.....	855-9
— welfare services.....	320-4	— statistics.....	859-60
— workmen's compensation.....	741, 772-3	Placer mining regulations.....	591
Organization for Economic Co-operation and Development (OECD).....	181	Platinum metals.....	539, 540, 551, <b>564-5</b>
Organized labour in Canada.....	773-83	Plywood and veneer industry.....	518-9
Origins of immigrants.....	221	Poland, tariff arrangements with.....	1008
— of population.....	196-7	— trade with—see "Trade by country".	
Outline of the Development of Civil Air Transport in Canada.....	838-43	Police forces.....	432-6
Overseas Telecommunication Corporation, Canadian.....	143, <b>146</b> , <b>873-4</b>	— municipal.....	434, 435, 436
		— provincial.....	433-4, 435, 436
Pacific Air Lines, Canadian.....	846	— Royal Canadian Mounted.....	<b>139</b> , <b>432-3</b> , 435, 436
Pakistan, tariff arrangements with.....	1003	Polymer Corporation Limited.....	143, <b>150</b>
— trade with—see "Trade by country".		Population, age distribution of.....	194-5
Panama Canal, Canadian use of.....	828	— birthplaces of.....	197-8
— tariff arrangements with.....	1008	— births and birth rates.....	<b>236-51</b> , 276
— trade with—see "Trade by country".		— Censuses 1961 and 1966, statistics of.....	182-202, 1262
Paper and allied industries, activity of		— cities, towns and villages.....	187-93
519-22, 671, 682, 689-95		— citizenship of.....	230
— newsprint, exports of.....	521, 982	— deaths and death rates.....	<b>236-41</b> , <b>251-65</b> , 276
— world production of.....	521	— density of.....	185-6
— products, exports of.....	982	— electoral districts.....	95-100
— imports of.....	985	— emigration of.....	227
— using industries.....	522	— Eskimos.....	208
		— ethnic groups.....	196-7
		— farm and non-farm.....	187
		— growth and movement of.....	182-5, 1262
		— households and families.....	200-2
		— immigrant, statistics of.....	217-26, 1262
		— incorporated urban centres.....	187-93

	PAGE		PAGE
Population, Indians.....	202-3	Prince Edward Island, allowances for blind persons.....	316
— infant mortality of.....	236-41, <b>259-63</b> , 276	— for disabled persons.....	317
— intercensal estimates.....	202, 1262	— family.....	313
— in labour force.....	744	— mothers'.....	322
— languages and mother tongues of.....	199-200	— youth.....	314
— marital status of.....	196	— area.....	7, 34, 441
— marriages and divorces of.....	236-41, <b>267-71</b> , 276	— births and birth rates.....	<b>236</b> , 243, 244, 250
— maternal mortality of.....	236-7, <b>263-5</b> , 276	— capital and repair expenditures.....	712
— metropolitan areas.....	186, <b>188</b>	— construction industry.....	716, 717, 719
— natural increase of.....	184, 185, 236-41, <b>265-7</b> , 276	— co-operative associations.....	919
— origins of.....	196-7	— deaths and death rates.....	<b>236</b> , 254, 259
— of provinces and territories.....	184-5, 186-7, 194-5, 199	— diseases, notifiable.....	306
— religious denominations of.....	198-9	— divorces.....	271
— rural and urban.....	186-7	— earnings, average in industry.....	751
— sex distribution of.....	194	— education—see "Education".	
— urban and rural.....	186-7	— electric power statistics.....	642, <b>651-5</b> , 656
— world.....	209-14	— employment, index numbers of.....	750, 751
Pork, consumption of.....	501, 502	— and payrolls.....	163
— prices of.....	945	— farm income.....	472, 473
Ports.....	<b>816-24</b> , 835, 837	— loans approved.....	459, 461
— vessels and cargoes entered at.....	817-22, 824	— statistics, Census.....	503-5
Portugal, tariff arrangements with.....	1008	— field crops.....	476-8
— trade with—see "Trade by country".		— fisheries administration.....	614
Postage, receipts from.....	890	— fishery products—see "Fisheries".	
Postal Union, Universal.....	174-5	— forest resources—see "Forest".	
Post Office, air mail services.....	889	— forested area.....	441, 511, 512
— Dept., Act administered by.....	154	— forestry program.....	515, <b>526</b>
— expenditure re.....	890, 1041	— freight movement.....	921, 922
— functions of.....	138, 889-90	— government.....	105-6, <b>107-8</b>
— gross postal revenue of.....	890	— debt.....	1062, 1063
— money order system.....	890	— revenue and expenditure.....	1036-7, 1057-61
— number of offices.....	889	— health services.....	281-4, 290-7, 307, 308
— organization of.....	889-90	— hospitals.....	281-4, 298-9, 301-3
— rural mail delivery.....	889	— immigrants—see "Population".	
— Savings Bank.....	1133-4	— judicial convictions—see "Criminal and judicial".	
— statistics.....	889-90	— labour legislation.....	737-41
Potash production.....	540, 552, <b>567-8</b>	— libraries.....	378, 379
Potatoes, consumption of.....	500	— Lieutenant-Governor.....	107
— production, yield and value of.....	475, 477	— livestock.....	481
Poultry, farm income from.....	471	— manufactures.....	688, 689-90
— meat, production and consumption of.....	483, 501	— marriages.....	236, 268
— numbers and values of.....	482-3	— motor vehicle and traffic regulations.....	800-3
Power, electric, construction.....	<b>614-8</b> , 715	— municipalities.....	119-20, 123
— exported.....	652, 653, 983	— old age assistance.....	316
— generating capability.....	648-50	— security.....	312
— nuclear, generation of.....	643-4	— parks.....	34, 37, 38, <b>41-2</b>
— statistics of.....	651-5	— population—see "Population".	
— thermal, generation of.....	642-3, 651, 653	— representation in the House of Commons.....	93, 95
— utilization of.....	637-8	— in the Senate.....	91
— water—see "Water Power".		— roads and highways.....	804, 805, 806
Prairie Farm Assistance Act.....	151, <b>462</b>	— schools—see "Education".	
— Rehabilitation Act.....	151, 445, 446	— unemployment assistance.....	318
— Grain Advance Payments Act.....	460	— insurance benefits.....	771
— Provinces, grain production.....	478	— water power of—see "Water Power".	
Precious Metals Marking Act.....	154, 155, <b>934</b>	— welfare services.....	320-4
Precipitation.....	52-72	— workmen's compensation.....	772-3
Preferential tariff.....	1000-4	Printing Bureau, Canadian Government.....	131
Preferred stocks, index numbers of.....	952	— publishing and allied industries.....	670-1, 682, 689-95
Premiers, provincial.....	106-17	— revenue from.....	894-5
Press, Canadian.....	891-5	Private hospitals.....	298-300
Prices of agricultural products.....	475, 493, 494, 495, <b>498-9</b> , 945	— industrial research.....	382-3, 385, <b>406-9</b>
— consumer, index.....	944-6	— schools.....	352, 353, 354
— field crop.....	475, 499, 909, 911	Privy Council, expenditure re.....	1041
— general.....	941-52	— members of.....	88-9, 1261
— livestock.....	499	— Office.....	138
— retail, of staple foods.....	945	Production, agricultural.....	<b>473-8</b> , <b>483-97</b> , 505-7, 914
— security, index numbers of.....	950-2	— defence.....	131-2, 1181-3
— Support Board, Fisheries.....	142, <b>148</b> , <b>613</b>	— electric power.....	<b>651-2</b> , 655-64
— wholesale indexes.....	941-3	— field crops.....	474-8
— world index numbers.....	943, 946	— fisheries.....	599-607
Primary metal industries, activity of.....	682, 689-95	— forestry.....	516-21
Prime Ministers since Confederation.....	86	— fur.....	622-7
Prince Edward Island, admission to Confederation.....	82	— manufacturing.....	665-701
— agricultural college and school.....	468	— provincial distribution of.....	687-95
— land.....	441	— mining and minerals.....	538-81, 594-5
— produce, index numbers of.....	474, 498	— trends, industry.....	1080-5
— services.....	463	Productivity trends, aggregate.....	1086-9
— Agriculture, Dept. of.....	463	Profits, corporation.....	1048-9, <b>1079-80</b>
		Proprietary corporations, Crown.....	<b>143-4</b> , 156, 162
		Provinces, areas of.....	7, 34, 441



	PAGE		PAGE
Provinces, education in—see "Education".		Publications, sale of official federal.....	1202-3
— population of.....	184-5, 186-7, 194-5, 199	— provincial, sources of.....	1203-35
— subsidies and grants to.....	1036-7	Publishing, printing and allied industries	
Provincial elections.....	106-17		670-1, 682, 689-95
— electric power statistics.....	<b>651-2</b> , 654-63	Pulp and paper industry.....	519-21, 684
— forest administration.....	526-34	— Research Institute of Canada.....	383, <b>534-5</b>
— reserves.....	34	— exports.....	631, 982
— franchise.....	106	— production.....	520, 521
— government aid to housing.....	723	— statistics, world.....	521
— to mineral industry.....	536-9	Pulpwood, production, consumption, imports	
— debt.....	1019, <b>1062-3</b>	and exports.....	514, 517
— economic planning agencies.....	1115-7		
— employment.....	162-3	Quarantine and sick mariners hospitals.....	286-7
— expenditure, 324-6, 354, 358, 1017, <b>1057</b> , <b>1059-61</b>		Quarrying, regulations <i>re</i> .....	592
— health activities.....	281-4, <b>290-7</b> , 324-6, 1059	Quartz production.....	540, 553
— information, official sources of.....	1204-35	Quebec, admission to Confederation.....	82
— insurance.....	1163-4	— agricultural colleges and schools.....	468
— public finance.....	1015-20, <b>1030-4</b> , 1036-7, <b>1057-63</b>	— land.....	441
— publications.....	1203	— produce, index numbers of.....	474, 498
— in relation to agriculture.....	463-8	— services.....	463-4
— to fisheries.....	613-21	— Agriculture and Colonization, Dept. of.....	463-4
— to forestry.....	526-34	— allowances for blind persons.....	316
— to labour.....	737-41	— for disabled persons.....	317
— to mineral industry.....	536-9, 591-2	— family.....	313
— revenue.....	809-10, 930, 1016, 1036-7, <b>1057-8</b>	— mothers.....	322
— savings institutions.....	1134	— youth.....	313
— tax levies.....	1018, 1020, 1030-4	— area.....	7, 34, 441
— welfare services.....	<b>320-4</b> , 1059	— births and birth rates.....	<b>236</b> , 243, 244, 250
— governments, organization, legislatures and		— capital and repair expenditures.....	712
— ministries.....	105-17	— Collective Agreement Act.....	738
— judiciaries.....	105	— construction industry.....	716, 717, 719
— labour legislation.....	737-41	— co-operative associations.....	919
— lands.....	33-4, <b>35</b> , <b>41-6</b> , 512, 591-2	— deaths and death rates.....	<b>236</b> , 254, 259
— liquor control and sales.....	930	— diseases, notifiable.....	306
— mining legislation.....	591-2	— divorces.....	271
— motor vehicle and traffic regulations.....	800-4	— earnings, average in industry.....	751, 754
— licences and permits, revenue from.....	<b>809-10</b> , 1016	— Economic Advisory Council.....	1115-6
— parks.....	34, <b>41-6</b>	— education—see "Education".	
— police forces.....	433-4, 435, 436	— electric power statistics.....	642, 645-6, <b>651-5</b> , 657-8
— research organizations.....	401-4	— employment, index numbers of.....	750, 751
— Royal Commissions.....	124-5	— and payrolls.....	163
— treasury bills.....	1019	— farm income.....	472, 473
— water power developments.....	638-41, 644-8	— loans approved.....	459, 461
— welfare programs.....	<b>320-4</b> , 1059	— statistics, Census.....	503-5
Provincial-federal agricultural agreements.....	445-7, 1053	— field crops.....	476-8
— conditional grants and shared-cost pro-		— fisheries administration.....	616-7
— grams.....	1050-6	— fishery products—see "Fisheries".	
— fisheries committees.....	608, 1054	— forest resources—see "Forest".	
— forestry agreements.....	525, 1054	— forested area.....	441, 511, 512
— hospital insurance.....	<b>281-4</b> , 1035, 1055	— forestry program.....	515, <b>528-9</b>
— housing activities.....	722, 728, 1056	— freight movement.....	921, 922
— resource development programs.....	445-7, 1055	— government.....	105-6, <b>110-2</b>
— road assistance programs.....	805-7	— debt.....	1062, 1063
— taxation agreements.....	1020, 1036-7, 1050-6	— revenue and expenditure.....	1036-7, 1057-61
— welfare programs.....	314-20, 1055	— health services.....	281-4, 290-7, 307, 308
Public Archives, Acts administered by.....	154	— hospitals.....	281-4, 298-9, 301-2, 304
— expenditure <i>re</i> .....	1041	— Hydro-Electric Commission.....	645-6, <b>658</b>
— functions of.....	138	— immigrants—see "Population".	
— debt, summary of.....	1045	— judicial convictions—see "Criminal and judicial".	
— finance, federal.....	125-9, 1015-29, <b>1035-50</b>	— labour legislation.....	737-41
— municipal.....	1015-9, <b>1034</b> , 1037, <b>1064-7</b>	— lakes, principal.....	12
— provincial.....	1015-20, <b>1030-4</b> , 1036-7, <b>1057-63</b>	— libraries.....	378, 379, 380
— health activities of Federal Government		— Lieutenant-Governor.....	110
—	<b>277-90</b> , 324-8, 334-5, 1038	— livestock.....	481, 916
— of provincial and local governments		— manufactures.....	688, 691-2
—	281-4, <b>290-7</b> , 324-6, 1059, 1066	— marriages.....	236, 268
— institutions—see under "Hospitals".		— mineral production—see "Mineral" and	
— hospitals.....	298-304	— "Minerals".	
— lands, federal.....	<b>33-41</b> , 46-9, 512, 515, 590-1	— mining, provincial aid to.....	587
— provincial.....	33-4, <b>35</b> , <b>41-6</b> , 512, 591-2	— laws of—see "Mining".	
— libraries.....	378, 380-1	— motor vehicle and traffic regulations.....	800-3
— ownership of electric power.....	653-4, <b>655-64</b>	— mountains and other heights.....	17-8
— parks.....	34, 35-46	— municipalities.....	119-20, 121, 123
— schools—see "Education".		— old age assistance.....	315
— Service Commission.....	<b>138-9</b> , 156	— security.....	312
— warehouses.....	917-8	— parks.....	34, 39, <b>42-3</b>
— welfare and social security.....	309-24	— Pension Plan.....	278
— Works Dept., Acts administered by.....	154	— pipelines.....	857, 858
— conditional grants and shared-cost		— police force.....	433, 435, 436
— programs of.....	1056		
— expenditure <i>re</i> .....	1041		
— functions of.....	139		





	PAGE		PAGE
Royal Canadian Sea Cadets.....	1174	Saskatchewan livestock.....	481, 916
— Commission on transportation.....	786	— manufactures.....	688, 693
— Commissions, federal and provincial.....	124-5	— marriages.....	237, 268
— Style and Title of The Queen.....	84	— mineral production—see "Mineral" and "Minerals".	
Rubber industries, activity of.....	671, 681, 691-4	— mining, provincial aid to.....	588-9
Rural and urban population.....	186-7	— laws of—see "Mining".	
Rye, acreage, production and value of.....	475, 476, 478	— motor vehicle and traffic regulations.....	800-3
— farm income from.....	471	— mountains and other heights.....	18
— prices of.....	475, 499	— municipalities.....	119-20, 122, 123
— receipts and shipments of.....	913	— old age assistance.....	316
— stocks of.....	479	— security.....	312
— supply and disposition of.....	912	— parks.....	34, 37, 39, 40, 45
		— pipelines.....	855-9
Safety legislation, industrial.....	739, 741	— population—see "Population".	
— traffic.....	802	— Power Corporation.....	647, <b>661-2</b>
St. Lawrence-Great Lakes traffic.....	828-32	— representation in the House of Commons.....	93, 99
— River ship channel.....	833	— in the Senate.....	91, 92
— Seaway Authority.....	143, <b>150, 828-32, 835, 837</b>	— Research Council.....	403
— statistics.....	828-32, 835, 837	— roads and highways.....	804, 805, 806
Salaries and wages—see "Wages".		— schools—see "Education".	
— in construction.....	<b>716, 751-4</b>	— unemployment assistance.....	318
— in Federal Government.....	156-63	— insurance benefits.....	771
— in manufacturing—see "Manufacturing".		— water power—see "Water Power".	
— on railways.....	<b>796, 800</b>	— welfare services.....	320-4
Sales of alcoholic beverages.....	930-2	— workmen's compensation.....	772-3
— of farm implements and equipment.....	903	Satellite, communication by.....	861-2, 874
— financing.....	904	Savings Bank, Post Office.....	1133-4
— of new motor vehicles.....	904	— bonds, Canada.....	1145
Salmon, production of canned.....	600, 607	— institutions, provincial government.....	1134
— quantity landed and value of.....	600, 603	— personal.....	1078
Salt production.....	540, 553, <b>568</b>	Sawmilling industry.....	517-8
Sand and gravel production.....	540, 553, <b>571-2</b>	Scholarships and fellowships.....	354, 376, 384, 385
Saskatchewan, admission to Confederation.....	82	School corporations, debt of.....	1067
— agricultural colleges and schools.....	468	Schools—see "Education".	
— land.....	441	— training for delinquents.....	428, 429
— produce, index numbers of.....	474, 498	Science Council of Canada.....	150
— services.....	466-7	Scientific and industrial research.....	382-411
— Agriculture, Dept. of.....	466-7	Sea fisheries.....	597-604
— allowances for blind persons.....	316	Seaway Authority, St. Lawrence.....	143, <b>150, 828-32, 835, 837</b>
— for disabled persons.....	317	Secretary of State Dept., Acts administered by.....	154, 228-30
— family.....	313	— conditional grants and shared-cost programs of.....	1056
— mothers'.....	322	— expenditure re.....	1041
— youth.....	314	— functions of.....	139, 228-30, 410
— area.....	7, 34, 441	Securities guaranteed by Federal Government.....	1043-4
— births and birth rates.....	<b>237, 243, 244, 250</b>	Security, social.....	<b>309-27, 329-33</b>
— capital and repair expenditures.....	712	— prices, index numbers of.....	950-2
— construction industry.....	<b>716, 717, 719</b>	Senate, indemnities and allowances of Members.....	100-1
— co-operative associations.....	919	— Members of and representation in.....	90-2, 1261
— deaths and death rates.....	<b>237, 254, 259</b>	Service co-operatives.....	919
— diseases, notifiable.....	306	— establishments.....	905-7
— divorces.....	271	— eating and drinking places.....	900-1
— earnings, average in industry.....	751, 754	— industries, average wages and salaries.....	751, 752
— education—see "Education".		Services Colleges, Canadian.....	1178-9
— electric power statistics.....	643, 647, <b>651-5, 661-2</b>	Sessions of Parliament, durations of.....	89
— employment, index numbers of.....	750, 751	Sex distribution of adult offenders.....	416, 419-20, 422-3
— and payrolls.....	163	— of immigrants.....	222-3
— farm income.....	472, 473	— of population.....	194
— loans approved.....	459, 461	— ratios of live births.....	242-3
— statistics, Census.....	503-5	Shared-cost and conditional grants programs.....	1050-6
— field crops.....	476-8	Sheep and lambs, marketing of.....	915, 916
— fisheries administration.....	619-20	— prices of.....	499
— fishery products—see "Fisheries".		— numbers and values of.....	481
— forest resources—see "Forest".		— slaughtered at inspected plants.....	482
— forested area.....	441, 511, 512	Shingles, shipments of.....	518
— forestry program.....	515, <b>531-2</b>	Shipping Act, Canada.....	154, 155, <b>816, 817, 833, 876</b>
— freight movement.....	921, 922	— aids to navigation.....	833, 873
— government.....	105-6, <b>114-5</b>	— coastwise.....	817-22
— debt.....	1062, 1063	— entered at Canadian ports.....	817
— insurance.....	1163-4	— foreign service.....	817-22
— revenue and expenditure.....	1036-7, 1057-61	— registry, Canadian.....	817
— health services.....	281-4, 290-7, 307, 308	— steamship inspection.....	<b>833-4, 835, 837</b>
— hospitals.....	281-4, 298-9, 301-2, 304	— subsidies.....	838
— immigrants—see "Population".		— traffic.....	<b>817-23, 824-32</b>
— irrigation and land conservation.....	445, 446	— vessels, registered.....	817
— judicial convictions—see "Criminal and judicial".		— water-borne cargo.....	<b>818-22, 826-8, 830-1, 922</b>
— labour legislation.....	737-41	Ships on Canadian registry.....	817
— lakes, principal.....	13	Sickness insurance.....	1159
— libraries.....	378, 379, 380		
— Lieutenant-Governor.....	114		



	PAGE		PAGE
Sierra Leone, tariff arrangements with.....	1004	Tanganyika, trade with—see "Trade by country".	
— trade with—see "Trade by country".		Tanzania, United Republic of, tariff arrange-	
Silver, monetary use of.....1123, 1124		ments with.....	1004
— production.....539, 540, 551, <b>563-4</b>		Tariff agreements.....	1001-10
— world production of.....594-5		— Board.....	140
Skins, fur, number and value of.....624-7		— customs and excise, structure of.....1000-1, 1028-9	
Slaughtering and meat packing industry		— revenue from.....1016, 1035, 1040	
482, <b>501-3</b> , 684		— relationships with Commonwealth countries 1000-4	
Small loans companies.....1140-1		— with non-Commonwealth countries..1001, 1004-10	
Social security..... <b>309-27</b> , 329-33		Tariffs, development of.....1000-10	
Sodium sulphate, production of.....540, 553, <b>570</b>		— and Trade, General Agreement on.....1001-10	
Soldier settlement.....147		Tax agreements, federal-provincial	
Soldiers Insurance Act, Returned.....333		1020, 1036-7, 1050-6	
Solicitor General, Dept. of the.....139-40, 154		— Appeal Board.....104, 140	
South Africa, tariff arrangements with.....1009		— corporation profits..... <b>1048</b> , 1079	
— trade with—see "Trade by country".		— excise, collected.....1049	
Sovereigns of Canada since Confederation.....84		— on gasoline and diesel fuel.....1031	
Soviet Union—see "Union of Soviet Socialist		— income.....1016, <b>1021-6</b> , 1030, 1035, 1040, <b>1045-9</b>	
Republics".		— revenue.....809-10, 906, 1016, 1035, 1040,	
Soybeans, production and value of.....477		<b>1045-50</b> , <b>1057-8</b> , <b>1064-5</b>	
Space research.....390, <b>397-8</b>		Taxation in Canada, system of.....1018-35	
Spain, tariff arrangements with.....1009		— federal.....1018, 1020-9	
— trade with—see "Trade by country".		— municipal.....1034	
Special Commonwealth African Assistance		— provincial.....1018, 1020, 1030-4	
Plan (SCAAP).....179		Teachers and salaries.....343-4, 352, 353, 356-7, 361	
Specialized Agencies, United Nations..... <b>173-6</b> , 181		Technical Assistance Program Commonwealth	
Spirits, excise revenue from.....1050		— and vocational education..346-9, 352, 353, 354, <b>363</b>	
— duties on.....931, 1050		Telecommunications.....861-88	
— government revenue from.....1179-80		— in Canada, Development of.....862-9	
Staff training colleges, Armed Forces.....890		— civil, Federal Government services.....875-9	
Stamps, postage, revenue from.....76-7		— and Electronics Branch of the Dept. of	
Standard time and time zones.....		Transport.....854, <b>875-9</b>	
State, Dept. of the Secretary of—see "Secretary		— Government control over agencies of	
of State".		<b>869-70</b> , 875-7, 881-2	
Statistics, Dominion Bureau of.....132		— overseas services.....873-4	
Steamship inspection, administration..... <b>833-4</b> , 835, 837		— cables landed in Canada.....874	
— subventions.....556		Telegraphs..... <b>865</b> , <b>872-4</b>	
Steel ingots and castings, production of.....499		Telephone, Trans-Canada System.....864-5, <b>880</b>	
Steers, prices of.....245, <b>249-51</b>		Telephones..... <b>862-9</b> , <b>870-2</b> , 873-4, 880	
Stillbirths.....950-1		— capital investment in.....715	
Stocks, index numbers of common.....950		— electronic systems.....865-9	
— of mining.....952		— microwave system.....880	
— of preferred..... <b>479</b> , 912, <b>917</b>		— statistics of.....870-2	
— of grain.....914-6		Television.....373-4, 880, <b>881-8</b>	
Stockyards, marketing at.....540, 553, <b>572</b>		Temperatures.....52-74	
Stone production.....917		Tenure of public lands.....34, 512	
Storage of grain, licensed.....916-8		Territorial governments.....105, 117-9, 123, 1261	
— and warehousing.....490		— judiciaries.....105	
Strawberries, production and value of.....807		Textile industries, activity of.....671, 681, 689-94	
Streets, urban.....783-4		Textiles, exports of.....982	
Strikes and lockouts.....		— imports of.....985	
Structural materials, production of		Theatres, motion picture.....905-6	
540, 543, 553, <b>570-3</b>		Thermal power, generation of.....634-7, <b>642-51</b> , 653	
Student Loans Act, Canada.....152, 349		— ownership and regulation of.....655-64	
Subalpine forest region.....509		— research in.....391-6	
Submarine cables.....874		Timber—see also "Forest" and "Forestry".	
Subsidies to provinces.....1036-7		— Crown..... <b>512</b> , 526-34	
— shipping.....838		— depletion.....514-6	
Subventions and bounties on coal.....584-5, <b>936-7</b>		— exports.....514, 982	
— steamship.....838		— lands, administration of.....522-3, 526-34	
Succession duties..... <b>1033</b> , 1040, <b>1049</b>		— marks, protection of.....935-6	
Sugar beets, production and value of.....478, 495		— stand, volume of.....511	
— and syrup, consumption of.....500		Time zones.....76-7	
— maple, production of.....495-6		Titanium production.....540, 553, <b>566</b>	
Suicides.....256		Tobacco, consumption of.....492	
Sulphur production.....540, 553, <b>568-9</b>		— leaf, acreage, production and value of.....492-3	
Summary conviction offences.....423-4		— products industries, activity of.....670, 681, 691, 692	
Supreme Allied Commander Atlantic		— taxes on.....1028, 1029, 1030-1	
(SACLANT).....177, 1168		— revenue from.....1035, 1050	
— Court of Canada.....103, 135		Tourist expenditure in Canada.....1010-2, 1014	
Surveying and mapping, Federal Government.		— of Canadians in United States and over-	
Surveys, labour force.....741-6		seas.....1010-4	
Sweden, tariff arrangements with.....1009		— information.....999	
— trade with—see "Trade by country".		— trade.....1010-4	
Swine—see "Hogs".		Towns and cities, population of.....187-93	
Switzerland, tariff arrangements with.....1009			
— trade with—see "Trade by country".			
Syria, tariff arrangements with.....1009			
— trade with—see "Trade by country".			
Syrup and sugar, consumption of.....500			
— maple, production of.....495-6			

	PAGE		PAGE
Trade agreements with Commonwealth countries.....	1000-4	Transport Dept., expenditure re.....	410, 1041
— with non-Commonwealth countries.....	1001, 1004-10	— functions of.....	140, 410, 785-8, 843-4, 875-9
— and Commerce Dept., Acts administered by.....	155	— Telecommunications and Electronics Branch.....	854, 875-9
— Canadian Trade Commissioner Service.....	140, 993-6	— rail.....	788-800
— commodity branches.....	998	— road.....	800-16
— conditional grants and shared-cost programs of.....	1056	— urban transit systems.....	815
— Exhibition Commission.....	999	— water.....	816-38
— expenditure re.....	1041	Transportation.....	785-860, 1038, 1059
— Export Credits Insurance Corporation.....	143, 148, 999-1000	— equipment industries, activity of 671-2, 682, 689-95	
— foreign trade services.....	993-1000	— government promotion and regulation of.....	785-8
— functions of.....	140, 993-1010	— Royal Commission on.....	786
— Trade Publicity Branch.....	998	Trapping, fur.....	622, 626
— balance changes.....	969	Travel between Canada and other countries.....	1010-4
— of international payments.....	1089-94	— Bureau, Canadian Government.....	999
— by commodity.....	957-9, 961-3, 980-7	— distances between certain cities.....	8
— by country.....	971-80	Treasury Board.....	125-9, 141
— by geographic area.....	970-80	Treaties, trade.....	1001-10
— by section and stage of fabrication.....	987-92	Tree species, forest.....	509-10, 512-3
— capital expenditures in wholesale and retail.....	711	Trends in economic aggregates.....	1068-1127
— coasting.....	817-22	Tributaries of principal rivers, lengths of.....	11
— combinations in restraint of.....	928-30	Trinidad and Tobago, tariff arrangements with.....	1004
— Commissioner Service, Canadian.....	140, 993-6	— trade with—see "Trade by country".	
— with Commonwealth and other countries.....	970-80	Truck traffic.....	813-4, 922
— with leading countries.....	971-2, 979-80	— companies, estates, trust and agency funds.....	1135-40
— disputes.....	783-4	Tuberculosis hospitals.....	297, 299-304
— domestic.....	896-940	— special programs for treatment of.....	783
— Government aids to and control of.....	923-37	Turkey, tariff arrangements with.....	1009
— fairs.....	997	— trade with—see "Trade by country".	
— foreign.....	953-1014	Turkeys, numbers and values of.....	482-3
— Government and.....	993-1010		
— markets.....	963-5	Uganda, tariff arrangements with.....	1004
— general agreements on tariffs and (GATT).....	1001-10	— trade with—see "Trade by country".	
— grain.....	905-14, 923-5	Unemployment assistance.....	317-8
— interprovincial.....	920-2	— insurance.....	150, 767-71, 1034
— marks, administration of.....	936	— Commission.....	142, 150, 768
— schools.....	346-9, 352, 353, 354, 363	— contributions and benefits.....	767-71
— services, foreign.....	993-1000	— persons insured under.....	770
— standards.....	934	— in labor force.....	742, 744, 746
— statistics, explanations re.....	967-9	UNESCO, Canada and.....	172, 174, 354, 376-7
— treatment of gold in.....	969-70	Union of Soviet Socialist Republics, tariff arrangements with.....	1009
— tariffs, development of.....	1000-10	— trade with—see "Trade by country".	
— tourist.....	1010-4	Unions, credit.....	1134-5
— unions.....	773-83	— labour.....	773-83
— wholesale and retail.....	897-9, 902-5	United Arab Republic, tariff arrangements with.....	1009
— average wages and salaries in.....	751, 752	— trade with—see "Trade by country".	
— establishments, capital and repair expenditures on.....	711	— Kingdom—see "Britain".	
— World, Canada's Participation in the Changing Pattern of, 1953-66.....	953-66	— Nations, Canada and.....	171-6, 354, 376-7
Traffic, air.....	845-8, 852-3	— Children's Fund.....	171
— at Canadian border points.....	1013	— Educational, Scientific and Cultural Organization.....	172, 174, 354, 376-7
— canal.....	824-32	— Food and Agriculture Organization.....	172, 173
— Great Lakes-St. Lawrence.....	828-32	— General Assembly.....	171
— harbour.....	817-22, 824	— Inter-governmental Maritime Consultative Organization.....	172, 174
— railway.....	792-4, 799, 921	— International Atomic Energy Agency.....	172, 176
— regulations, motor vehicle and.....	800-4	— Bank for Reconstruction and Development.....	172, 175
— road and highway.....	811-4, 1013	— Civil Aviation Organization.....	172, 174, 843
— shipping.....	817-23, 824-32	— Development Association.....	172, 175-6
— truck.....	813-4, 922	— Finance Corporation.....	172, 175
Training, air force.....	1177, 1178-80	— Labour Organization.....	172, 173
— apprenticeship.....	347, 348	— Law Commission.....	176
— army.....	1175, 1178-80	— Monetary Fund.....	172, 175
— naval.....	1173-4, 1178-80	— Telecommunication Union.....	172, 174
— schools for delinquents.....	428, 429	— Specialized Agencies.....	173-6, 181
— vocational.....	346-9, 352, 353, 354, 363	— World Health Organization.....	172, 173-4
Trans-Canada Air Lines—see "Air Canada".		— Meteorological Organization.....	172, 174
— Highway System.....	139, 805-6	United States dollar in Canada, price of.....	1143
Transit systems, urban.....	815	— trade with.....	628, 970-2, 975, 979, 980, 981-7, 988-91
Transport Board, Air.....	130, 787, 854	— agreement with.....	1010
— civil air.....	838-55	Universal Postal Union.....	172, 174-5
— Commissioners, Board of.....	104, 130, 786-7, 837	Universities—see "Education".	
— Dept., Acts administered by.....	155	University Capital Grants Fund.....	361
— air services.....	140, 845-6, 849-52	— Grants Program.....	349, 361, 362
— canals.....	825, 837		
— conditional grants and shared-cost programs of.....	1056		



	PAGE
Uranium production.....	539, 540, 552, <b>562-3</b>
Urban and rural population.....	186-7
— centres, births in.....	<b>238-40</b> , 244
— deaths in.....	<b>238-40</b> , 254, 261
— employment in.....	750, 751-2
— marriages in.....	238-40
— natural increase in.....	238-40
— proposed construction in selected.....	718
— renewal.....	723, 727-8
— streets.....	807
— transit systems.....	815
Uruguay, tariff arrangements with.....	1010
— trade with—see "Trade by country".	
Utilities, capital, repair and maintenance expenditures in.....	710
 Vacations Act, Annual.....	153
— regulations re.....	<b>738</b> , 740, 765-6
— and working conditions.....	764-6
Veal, consumption of.....	501, 502
Vegetables, acreage and production of.....	491-2
— consumption of.....	501
— exports of.....	981
— imports of.....	984
Veneer and plywood industries.....	518-9
Venezuela, tariff arrangements with.....	1010
— trade with—see "Trade by country".	
Vessels on Canadian registry.....	817
— entered at Canadian ports.....	817
Veterans Affairs, Dept. of, Acts administered by.....	155
— expenditure re.....	410, 1041
— functions of.....	141, 329-36, 410
— allowances.....	330-1
— Assistance Fund.....	333
— Bureau.....	141, 332
— gratuities.....	332
— hospitals.....	334
— insurance.....	333, 336
— Land Act.....	147, 155, <b>335-6</b>
— loans and grants.....	332, 335-6
— medical services.....	334-5
— pensions.....	329-30
— re-establishment credits.....	332
— rehabilitation and welfare services.....	333
Villages, towns and cities, populations of.....	187-93
Vital statistics.....	235-76
— births and birth rates.....	<b>236-51</b> , 276
— multiple.....	244-5
— Canadian life tables.....	271-5
— deaths and death rates.....	<b>236-41</b> , <b>251-65</b> , 271
— divorces.....	271
— infant mortality.....	<b>236-41</b> , <b>259-63</b> , 276
— international comparisons of.....	275-6
— marriages and marriage rates.....	<b>236-41</b> , <b>267-70</b> , 276
— maternal mortality.....	<b>236-7</b> , <b>263-5</b> , 276
— natural increase.....	<b>236-41</b> , <b>265-7</b> , 276
— summary of.....	235-41
Vocational rehabilitation.....	296, <b>319-20</b> , 333, <b>732-3</b>
— and technical education.....	<b>346-9</b> , 352, 353, <b>354</b> , <b>363</b>
Voluntary health and welfare activities.....	328-9
Votes polled at federal elections.....	95-100, 102
 Wage rates and hours of labour.....	762-6
— for selected occupations.....	763-4
Wages and salaries, average.....	750-8, 767
— by industry.....	750-8
— by provinces.....	751, 754
— in cities.....	751-2, 754
— in manufacturing.....	751-9
— of farm labour.....	766-7
— on railways.....	796
— legislation re.....	734-40
— minimum, regulations re.....	737-8, 739-40
— Policy, Fair.....	734-5

	PAGE
War allowances, veterans.....	331
— Graves Commission, Commonwealth.....	336
— pensions, for veterans.....	329-30
— Veterans Allowance Act.....	331
— Board.....	141, 330-1
— services—see "Veterans".	
Warehousing and storage.....	916-8
Water area, fresh, of Canada.....	7
— conservation.....	445-6
— power, available in industries.....	653
— construction of generating facilities, 1965.....	644-8
— ownership and regulation of.....	655-64
— resources, undeveloped and developed.....	638-41
— transport.....	816-38
— facilities and traffic.....	816-34
— financial statistics of.....	831, <b>834-8</b>
— Government aids to.....	833, 878
— revenue from.....	831, <b>837</b>
— shipping.....	<b>817-22</b> , 824-32
Waters, coastal.....	14-6
— inland.....	9-14
Weather services.....	75-6, <b>849</b> , 877-8
Weights and measures, administration of.....	934
— interpretation of.....	vii
Welfare services, federal.....	309-14, 332-3, 1038
— federal-provincial.....	314-20
— for Indians and Eskimos.....	207, 208
— international.....	324
— provincial.....	<b>320-4</b> , 1059
— veterans.....	332-3
— voluntary.....	328
Wheat, acreage, production and value of.....	475, 476, 478
— Board, Canadian.....	<b>146</b> , 469, 470, <b>924-5</b>
— exports and imports of.....	909-10, 912, 981
— farm income from.....	471
— flour production.....	914
— international statistics of.....	505-6
— marketing of.....	908, <b>909-10</b>
— prices of.....	475, 499, 909, 910
— receipts and shipments of.....	913
— stocks of.....	479, 912
— supply and disposition of.....	909-10, 912
Wholesale prices, index numbers of.....	941-3
— trade.....	897-8, <b>902</b>
Wildlife resources and conservation.....	<b>49-51</b> , 447, 629-33
Wood industries, activity of.....	517-9, 672, 682, 689-95
— products, exports.....	514, 521, 982
— imports.....	521, 984-5
— research.....	523-4
— pulp, exports of.....	982
Woods operations.....	516-7
Wool, production and consumption.....	494
Working conditions of employees in.....	764-6
— manufacturing.....	773
Workmen's compensation.....	739, 741, <b>772-3</b>
— paid by provinces.....	209-14
World areas and populations.....	145-6
— Exhibition, 1967.....	145-6
— Health Organization.....	172, <b>173-4</b>
— metallic mineral and fuel production.....	594-5
— Meteorological Organization.....	172, <b>174</b>
— newspaper statistics.....	521
— pulp statistics.....	521
— Trade, Canada's Participation in the changing Pattern of, 1953-66.....	953-66
— wholesale and retail price indexes.....	943, 946
 Young adult criminal offenders.....	421-3
Youth allowances.....	153, <b>313-4</b>
Yugoslavia, tariff arrangements with.....	1010
— trade with—see "Trade by country".	
Yukon Territory, administration of.....	105, <b>117-8</b>
— allowances for blind persons.....	316
— for disabled persons.....	317
— family.....	313
— youth.....	314
— area.....	7, 34
— births and birth rates.....	<b>237</b> , 243, 244, 250



	PAGE		PAGE
Yukon Territory, creation of.....	82	Yukon Territory, mining laws of—see "Mining".	
— deaths and death rates.....	237, 254, 260	— motor vehicle and traffic regulations.....	800-4
— diseases, notifiable.....	306	— mountains and other heights.....	17, 18-9
— education in.....	343, 353, 356	— municipalities.....	123
— electric power statistics.....	643, 648, 651-5, 664	— old age assistance.....	316
— fishery products—see "Fisheries".		— security.....	312
— forested area.....	441, 511, 512	— population—see "Population".	
— government revenue, expenditure and debt		— representation in the House of Commons....	93, 100
1036-7, 1057-61, 1063		— roads and highways.....	804, 805, 806-7
— health services.....	281-4, 286, 307	— unemployment assistance.....	318
— hospitals.....	281-4, 298-9, 301-2, 304	— water power of—see "Water Power".	
— lakes, principal.....	14		
— manufactures.....	689, 695		
— marriages.....	237, 269		
— mineral production—see "Mineral" and			
"Minerals".		Zinc production.....	539, 540, 552, 558-60
		— world production of.....	594-5









# CANADA

Scale of Miles 0 100 200  
Scale of Kilometers 0 100 200  
Published by the  
DEPARTMENT OF ENERGY, MINES AND TECHNICAL SURVEYS  
OTTAWA, CANADA  
PRINTED BY THE  
CANADA YEAR BOOK DIVISION, BUREAU OF STATISTICS



# CANA

STATUTE MILES

100 50 0 100

FEDERAL CAPITAL PROVINCIAL

 RAILWAY

COMPILED AND DRAWN BY THE  
DEPARTMENT OF ENERGY, MINES AND  
SURVEYS AND MAPPING BRANCH  
FOR THE  
CANADA YEAR BOOK DOMINION BUREAU







